

19 August 2014

Hello all,

Just a few hours after I reported on 6 August that male #37 was wandering around residential yards, I found that he had returned to the nature preserve during the previous evening. As we accumulate more data on our seven telemetered rattlesnakes, some general movement patterns begin to emerge.

First, the two pregnant females have not moved at all. Each has stayed in her respective refuge since mid-July, warm at night and not too hot during the day. The photo below of female #41 is all that we usually see of her, while female #39 normally stays completely out of sight. The same body temperature trends I described last time continue: the lowest recorded = 77F and average = 86F for the pregnant females, while the same data for our five males is lowest = 55F and average = 77F (now with 161 and 37 body temps recorded for males and females, respectively).

Male movement is much different. If we take the total distance moved divided by the number of days we've been tracking each snake, we come up with average (or "mean") daily movement (MDM) of 26, 29, 36, 37, and 13 meters/day (a meter is 39.37 inches, so a little more than a yard) for our five males. With a more robust data set, MDM is useful for comparing individuals to one another or for comparing groups (e.g., males vs. females or pregnant vs. non-pregnant females) but it probably grossly underestimates how far the snakes actually move. To begin with, we take straight-line measurements between points where we find them but, of course, they don't move in a straight line. Plus, by only checking on them every couple of days, who knows what we miss? For example, male #36 spent from 29 July through at least 11 August in and around California ground squirrel burrows on the grassy hillside on the left as you enter the nature center from the parking lot... except for 4 August, when we found him 182 m northeast, out in the preserve! The next day, 5 August, he was back on the hillside just a few meters from where he had been on 2 August (see the yellow track on the satellite photo below). Had we not checked on him on 5 August, it would have appeared that he stayed on his hillside for two weeks straight. So what did we miss on 1,3,6 and 8 August when we didn't visit him?

If we zero in on the 55 straight-line movements of our males that were determined from consecutive daily visits, the average movement is 41 m/day (about half a football field per day), the low is 0 m/day and the longest one day movement is 229 m (2.5 football fields). Every now and then, it would be great to be able to sample the snakes every few hours for a 24 hour period to get a better idea of what's happening, especially at night. Not much happens during the day in mid-summer.

Remember, the males wander around in the spring (as well as late summer/fall) looking for mates while eating very little. Then, after the spring courtship season, they hunt. Interestingly, our first four rattlesnakes (all males) were captured by staff around the ponds and buildings between 15 May and 12 July, with no new ones since then (the two females and one more male were found by Denise and /or I out in the preserve while tracking the others). Between 15 May and 14 July, we only had two occasions where rattlesnakes were in ground squirrel burrows but since 14 July we have found telemetered rattlesnakes inside or coiled within a couple feet of ground squirrel burrows 29 times (see photo of male #36 below). The fact that

staff and/or visitors encountered four male rattlesnakes - and no females - around the Maidu village and visitor center during the two months between mid-May and mid-July but none in the 5 weeks since 14 July is consistent with previous data and supports our hypothesis that most rattlesnake bites to people involve male rattlesnakes and occur during the courtship season. That's when the males turn up in yards and on trails where they encounter people. Several colleagues and I once made a presentation at a medical conference titled, "Males biting males: Does testosterone shape both sides of the snakebite equation?" Many studies have shown that far more men than women become snakebite victims and it appears that most of the rattlesnakes involved are males that encounter people while searching for mates!

Best wishes,

Mike







Female #41



Male #36, 16 July 2014