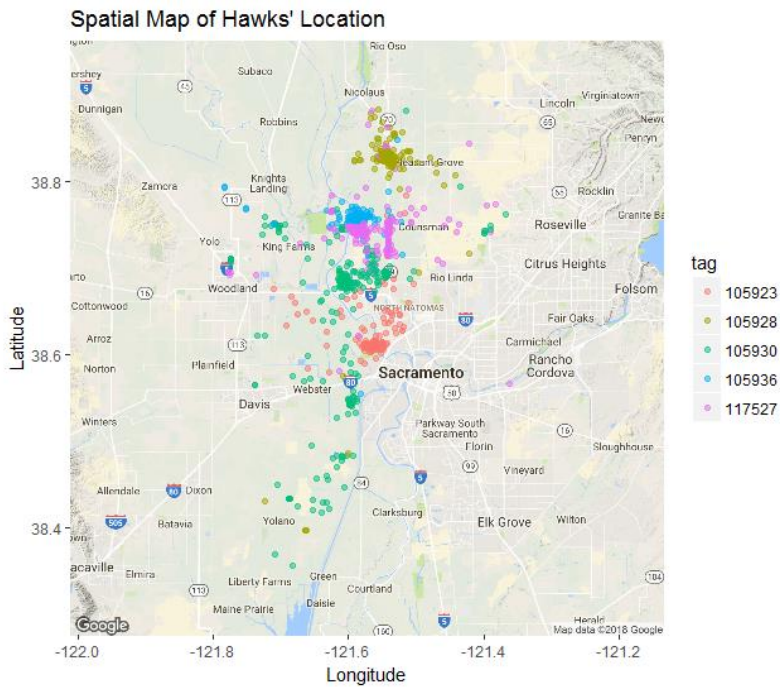


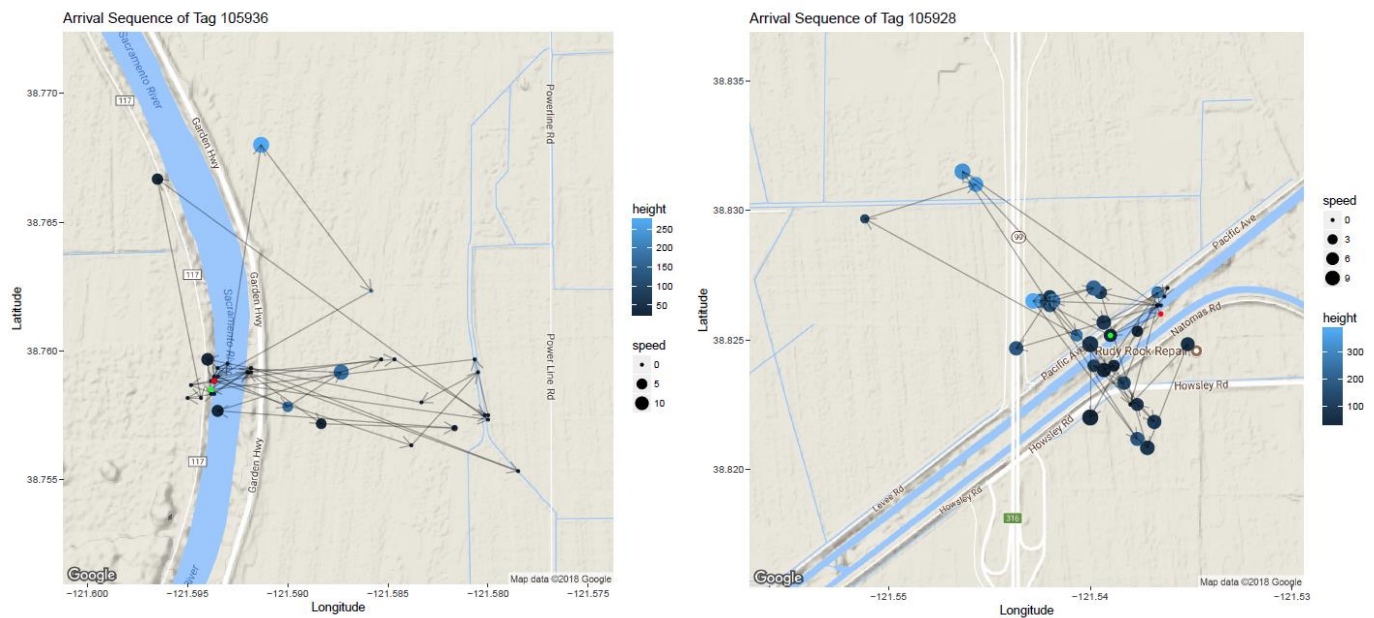
HW4

1.



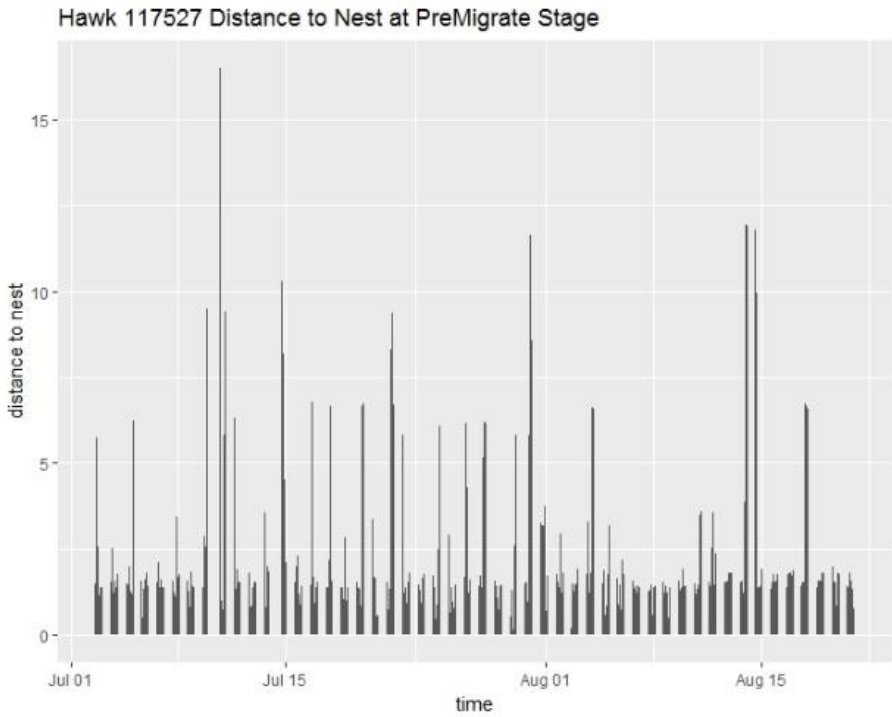
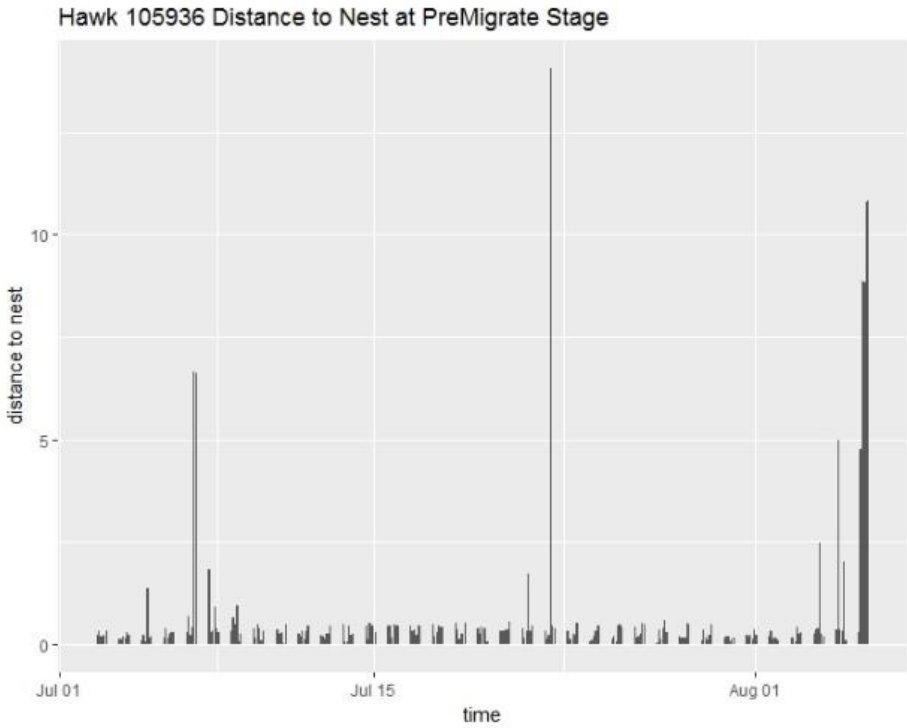
The plot shows the location of all five hawks in different time, and different hawks has different color of points in the plot.

2.

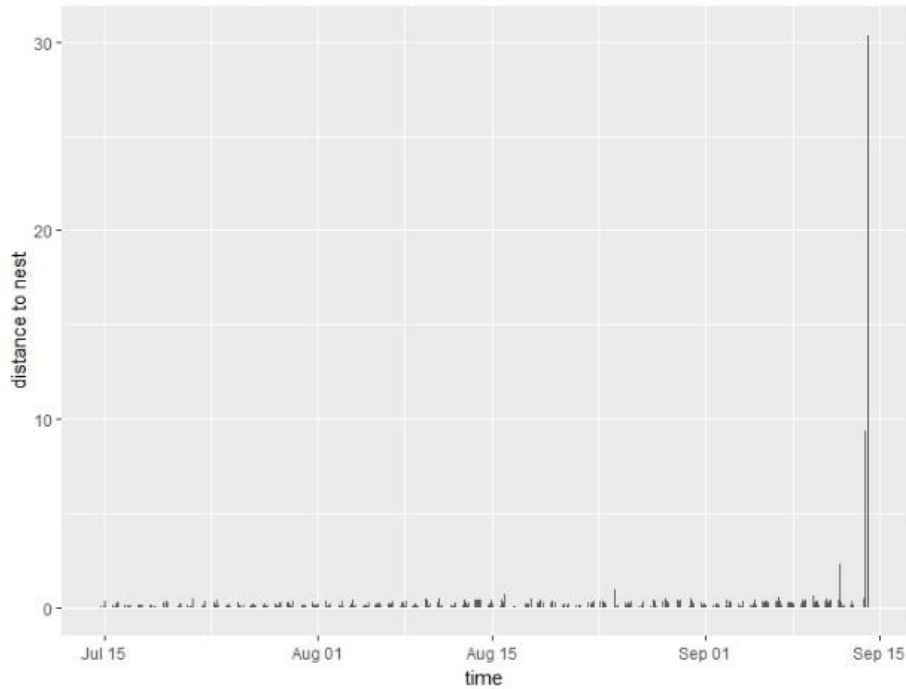


The two plots above show the arrival sequence of hawk 105936 and hawk 105928. The green dots are the start of sequence and the red dots are the end of sequence.

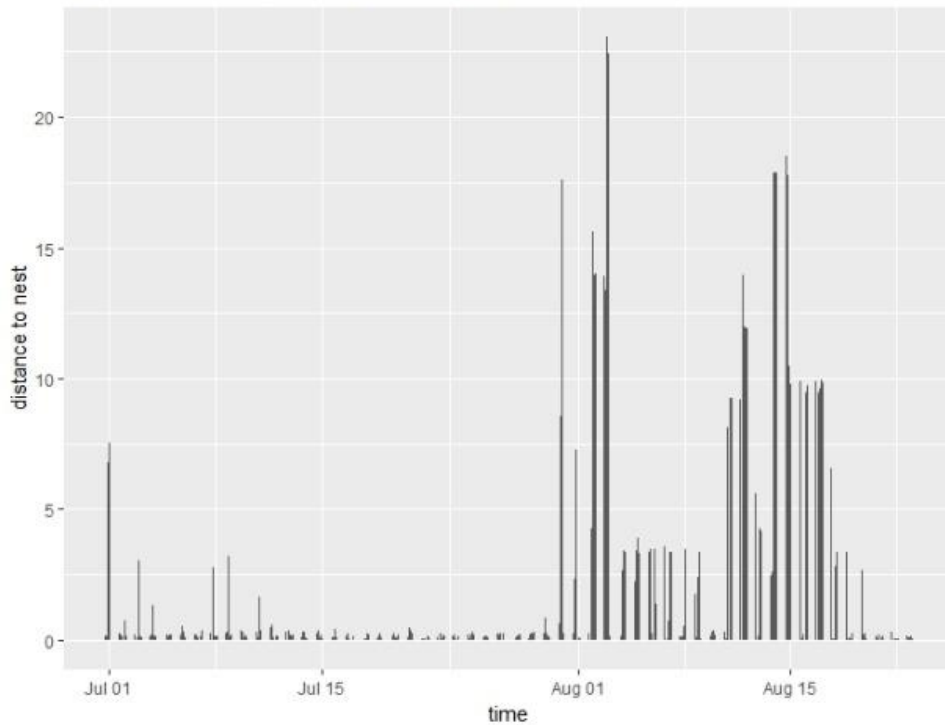
3.



Hawk 105928 Distance to Nest at PreMigrate Stage



Hawk 105930 Distance to Nest at PreMigrate Stage

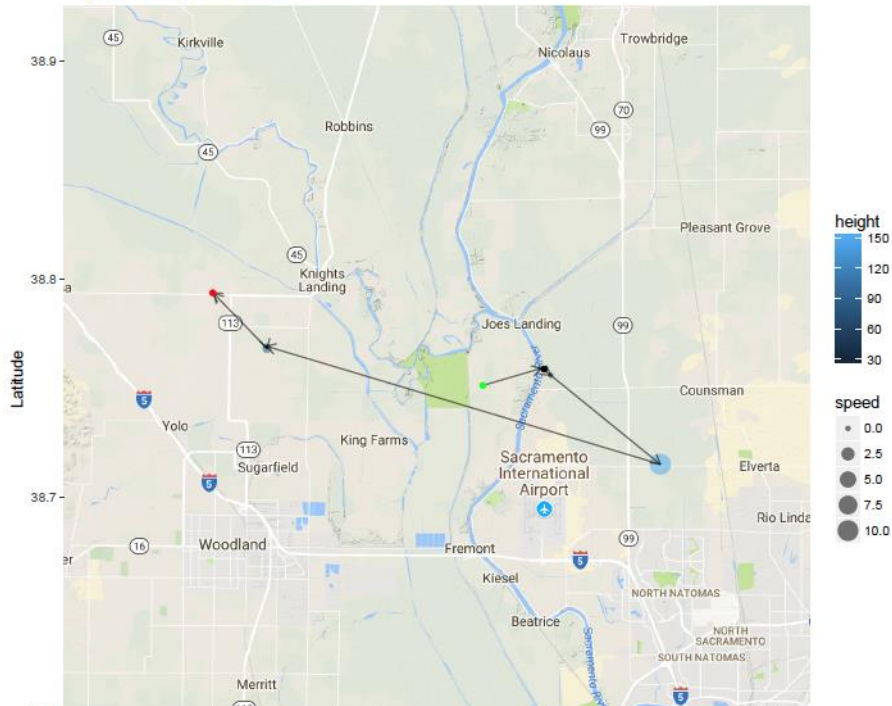


Each plot from the above shows the distance to nest at the pre-migrate stage of the hawks. Since Hawk 105923 doesn't have the pre-migrate stage, the plot is not shown. I believe that the hawks only leave its nest at the pre-migrate stage.

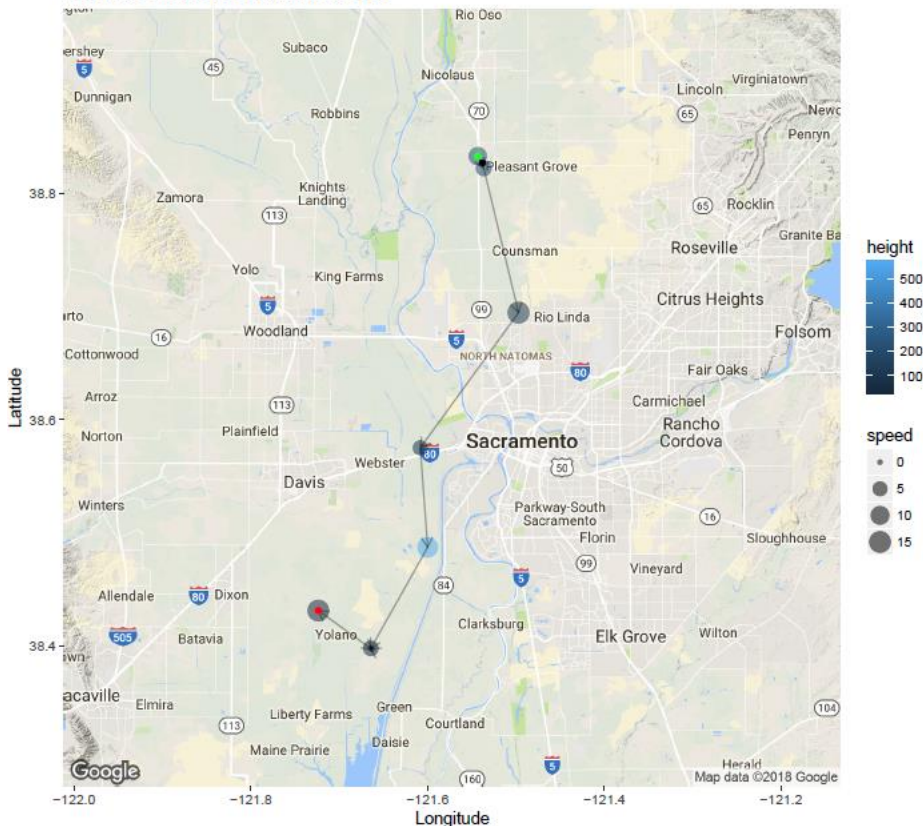
For hawk 105936, we can tell from the plot that it left the nest around August 5, because at the end of pre-migrate stage it is far away from the nest. From the plot for hawk 105928, we can see that it left around September 15. However, from plots for the hawk 117527 and hawk 105930, we can't tell that when is the last time they left their nests. Since the pre-migration stage for hawk 105923 is not available, we can assume it didn't leave its nest.

4.

Departure Sequence of Hawk 105936



Departure Sequence of Hawk 105928



The two plots show the departure sequence of the two hawks that left their nests. The green dots are the start of sequence and the red dots are the end of sequence. Form the sequences, we can see that Hawk 105936 was going west and Hawk 105928 was going south.