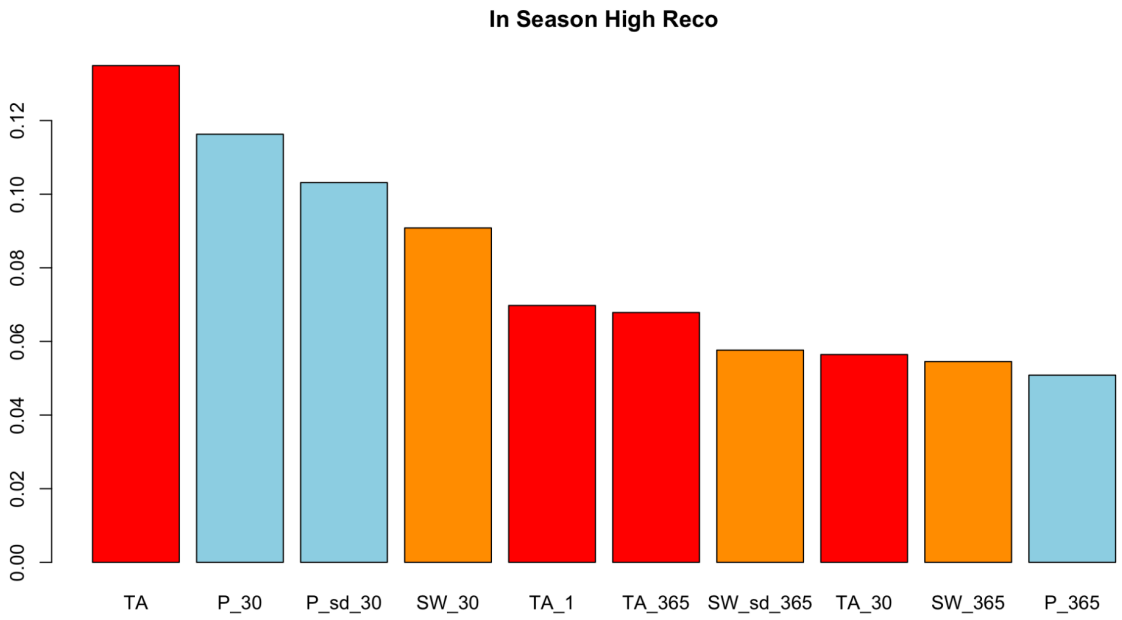
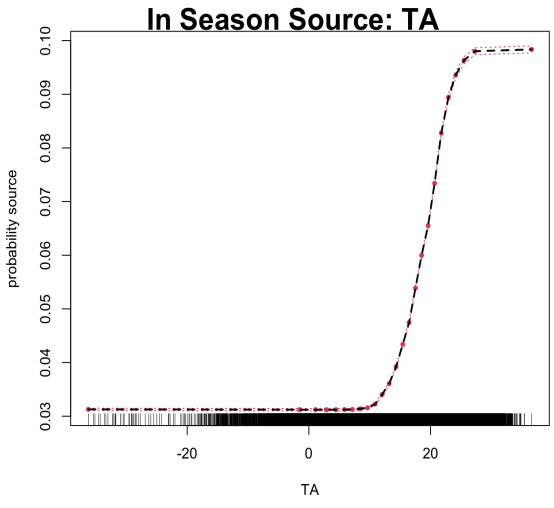
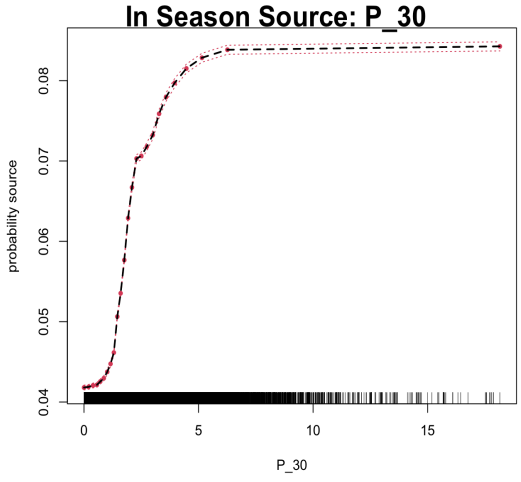


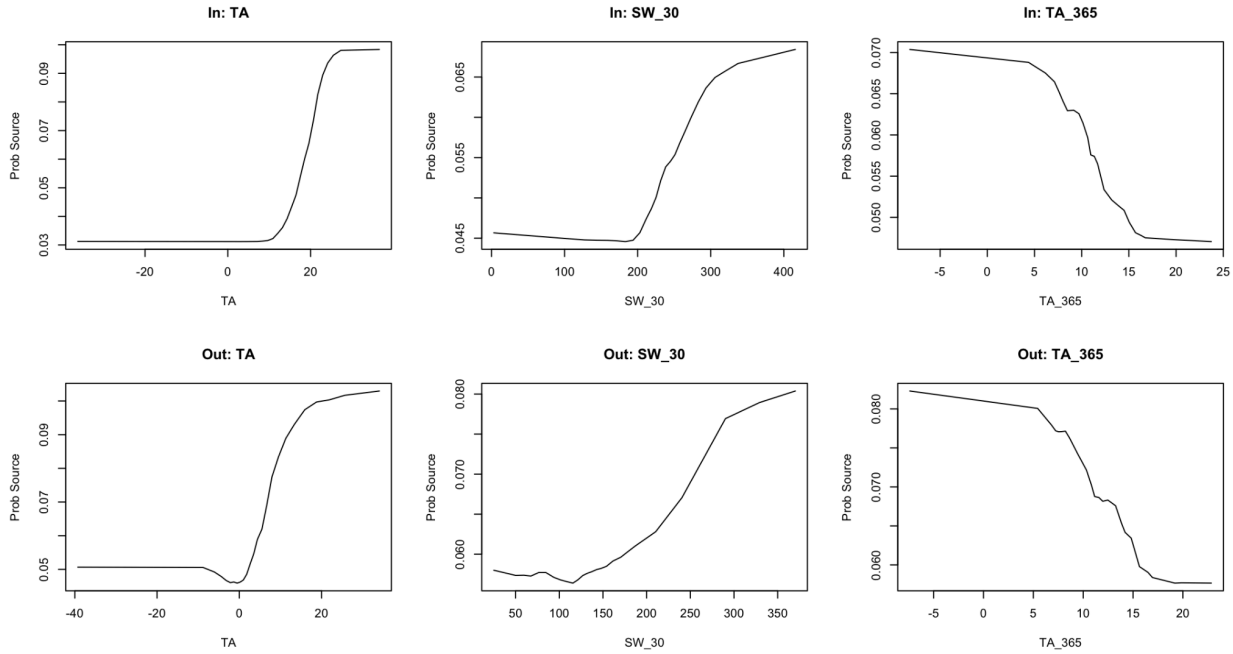
The only difference between this and the overall high reco, is that the P_365 is replaced with TA7 in the combined seasons model. This is probably due to the fact that almost all the high reco days occur in season.

Here are some PDP's. I am glad these ran since the overall source wouldn't, and I am assuming these two look similar anyways since the classifications are the same.





Comparison between in and out of season key shared predictors.
I included TA_365 since they share a lot of year long lags in places 5-10, including this one.

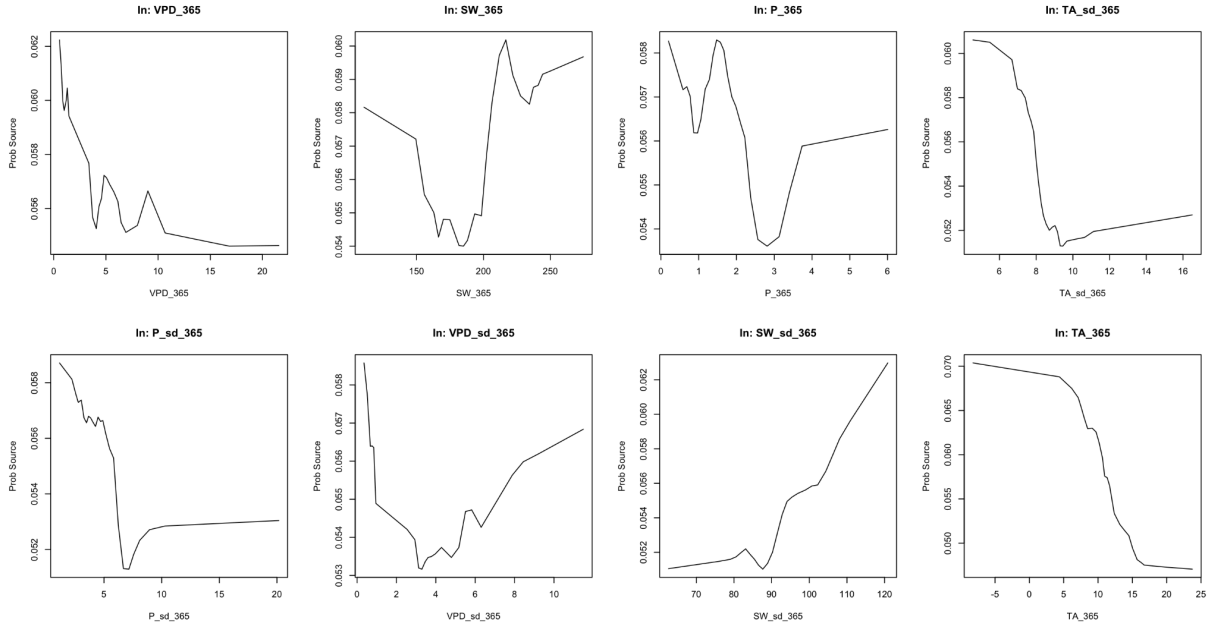


Can’t tell if it's saying that the highest reco will happen in cooler years, or if it's just a random effect that is driven by site differentiation. I would think that site differentiation would result in a flat pdp, but still high vimp. With that said I want to look into more of these.

Temperature follows the same pattern, just with a lower threshold in out of season, which makes sense. For SW30, its important to know that while being the 4th predictor for out of season source (vimp=.045), the vimp for the in season SW_30 is twice that (.092). This accounts for the tighter threshold range that we see in season, while out of season covers a broader range with a slower slope.

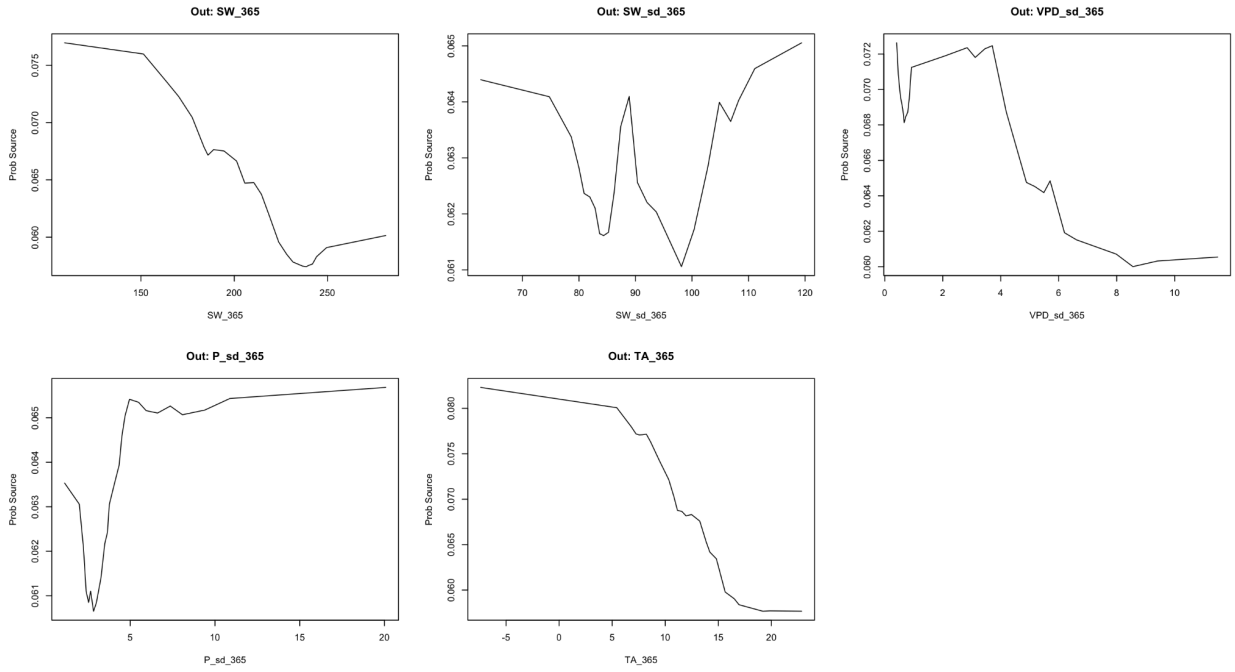
Is it actually saying that a hotter year decreases probability of source? So a cooler year with a hot day is where we see the highest reco? Or is this a site thing? I want to look at other year long variables to determine this.

Here are all the year long variables for in season, since they were all significant!



Looking at this, it looks like TAsd365, TA365, and SWsd365 could have actual general patterns. The other ones appear to be pretty site driven I think. Except for maybe VPD, I'd want to explore the site distributions here. This would be a good place to start holding values constant and looking at PDP's if you can figure out how to do that.

Here are the same, but for the top year long variables for out of season. Overall, these are about half as important as the in season year longs (.2-.36ish vimp).



Overall, I feel like year long for the out of season sources should be less important because it's a middle of the pack reco, which means that every year, the reco is going to have to pass by

these values when switching to in season. But there's also this incorporation of GPP being low, so technically the question here is: what causes reco to rise without gpp rising significantly? **We are going to pass by these reco values regardless, but what is keeping GPP low when that happens?**

- For example, according to these PDP's, having a low sunlight year keeps GPP down while Reco rises.

There's a really interesting conflicting (but reasonable) relationship here for out-of-season source that is a negative correlation between TA365 and reco, but a positive correlation between TA and reco. Essentially, a hotter day in a colder year maximizes probability of out of season source. This would lead me to think that GPP is more connected to longer lags, maybe photosynthetic mechanisms are decreased during a colder year and then a hot day drives up reco, resulting in low gpp and increased reco.

- How fast does respiration respond to heat?
- How fast does GPP respond to heat if its an overall cooler year?

As the standard deviation of the temperature increases, then the probability of strong source in season increases. What does this mean? The more random the occurrence of a warmer temperature (unexpected, this hasn't been happening much this year), the more likely it is that GPP doesn't respond.

Next, I want to hold constant a variable and run pdp on the other. Does clustering disrupt the uneven year lags that we see?