Workflow based on suggestions from Gabe’s (subject line = 2018 array questions)

Telemetry Data Workflow: From Database to Model

1. Filter raw detection files
2. Get all detections into Access database. Follow SOP written for this, located :

Z:\Shared\Projects\JSATS\DSP\_Spring-Run Salmon\SOPs\ JSATSData\_Import\_into\_Access.docx

1. Draw out model schematic to help better visual how the data will be fit to the model
2. Follow steps in the script : C:\Users\chause\Documents\GitHub\JSATS\_SpringRun\_19\script\formatting\_detection\_csvs.R

To format your detection file so they are good to run through all the proceeding code

1. Make individual plots for each tag, note the ones with weird detections or have detection histories that won’t fit your model. Use Chris’s code to make the individual plots: C:\Users\chause\Documents\GitHub\JSATS\_SpringRun\_19\script\ 2019\_WaterfallPlots.R

and gabe’s code (fish check) to look closer at the tag that have upstream movement:

C:\Users\chause\Documents\GitHub\JSATS\_SpringRun\_19\script\ rkm\_plotcode\_eachTag\_GS.R

1. Apply a 16km predator filter to the data using the code in this script:

C:\Users\chause\Documents\GitHub\JSATS\_SpringRun\_19\script\ 2019\_Predator\_Filter.R

Delete the detections that don’t fit the model. To do this, follow directions at the top of the

C:\Users\chause\Documents\GitHub\JSATS\_SpringRun\_19\script\Removing\_dets\_to\_fit\_Model.R

\*\*\*\*6b. \*\*\*\* if you have to add data in (for example, all of Benicia data) after you had already removed dets to fit the model, just continue to add to/edit the running csv that has all the detection that you need to remove.

1. Once you remove the detections that don’t fit the model, re-run your detection files through the individual tag plot code (from step 3) to make sure all the detection histories look good
2. Look more closely at certain receivers to see how many fish were detected there (ie. MR OR) so you know which recs to use in model and which to drop. Use code:

C:\Users\chause\Documents\GitHub\JSATS\_SpringRun\_19\script\closer\_look\_at\_recs.R

1. Run transit rate code to get any idea about how fish moved through the system
2. add site and array codes to the raw data, simplify raw data (i.e. keep first and last dets at a receiver for each visit): use code in script “Make\_Visit\_Site\_Array\_Code\_2019” located : C:\Users\chause\Documents\GitHub\JSATS\_SpringRun\_19\script
3. get detection history conditional and auxilary (dual-array) counts. This is what is fed into the model. Code to do this is :

C:\Users\chause\Documents\GitHub\JSATS\_SpringRun\_19\script\ Make\_Conditional\_Counts\_w\_Aux\_Delta2019.R for the delta release and C:\Users\chause\Documents\GitHub\JSATS\_SpringRun\_19\script\ Make\_Conditional\_Counts\_w\_Aux\_Upper2019.R for the upstream release

1. I would say re-tool model.  You will probably have to reconfigure/simplify the model at this point on account of sparse data at downstream locations.  Sort of how we pooled the data for the  HWY4 locations.  It may require cycling back to step 10 to configure your counts, depending on the changes made to the model
2. Fix parameters (survival or detection probabilities) that are on the boundary of either 0 or 1 (the model doesn't do well with estimates that are on these boundaries), adjust PARAMETER SEEDS, or email Rebecca for help to get the model to run

SUMMARY:

1. Get data filtered
2. Put data into database
3. Format data so it can be easily read by the different filtered scripts: use script “formatting\_detection\_csvs.R”
4. Run predator filter on the formatted detection csv for all groups (the upstream and downstream rel group combined file) and then split it up and save as 2 files
5. Pull the all groups predator filtered files into the “ Removing\_Dets\_to\_fit\_Model.R” script to edit the file to be compatible with model
6. Pull these model-edited files back into the “formatting\_detection\_csvs.R” to finish formats on the files- ie just binding the release location csv
7. Then run those files with the rel locations included through the Make\_Visit\_Site\_Array\_Code\_2019. This adds the site code to each detection.
8. Take the file of first detections only ( that you made from step 7- ie. DeltaRel\_visits2019\_first\_All\_NOAAdata\_120319.csv and UpRel\_visits2019\_first\_All\_NOAAdata\_120319.csv) and push that through the Make\_Conditional\_Counts\_w\_Aux\_Upper2019.R script (for the upper release first dets)

Make\_Conditional\_Counts\_w\_Aux\_Delta2019.R (for the lower release first dets)

THE OUTPUT FROM THIS GETS PUSHED THROUGH THE USER MODEL