Hi Beth,

this is a good start. Some comments:

-Instead of storing the number of animals in each weekly age class for each simulated week, you could just keep track of your population with vectors (eg a vector of size 260 for females), and compute at each timestep the summary stats you want to extract, without storing all the data. Especially as you will run a model for a lot more than 52 weeks, so you would be storing very large matrices. Having said that, fine if the model is fast enough.

-the model is in discrete time, so you are not working with rates but risks. You need to consider how events should be combined. For instance: fIm\_new <- fIm\_mat[,w\_prev]\*(immunity\_F - (net\_off\_F+mort\_F)) can become negative if immunity\_F < net\_off\_F+mort\_F. Instead, I would write this as: fIm\_mat[,w\_prev]\*immunity\_F \*(1-net\_off\_F)\*(1-mort\_F): animals in fIm at the next timestep are those that did not die, were not part of the offtake, and for which immunity did not wane

-You may need to consider longer max life expectancies,

- it would be nicer to have the immunity waning at each timestep rather than abruptly at the end of each period. Fine if you are planning to modify this later.

Guillaume