# Description of Data Inputs

I’m writing this as kind of a guide to the [Pinniped-Gauntlet-Model](https://github.com/lizallyn/Pinniped-Gauntlet-Model) generalized version Github repo. More how-to, less academic paper.

## Salmon

### Arrival Data

The script “Prep\_Salmon\_Data.R” uses function “createSalmonArrival.R” to create an arrival curve using the inputs provided in “salmon\_run\_info.csv”. The function createSalmonArrival uses the columns “Peak\_Date”, “sd”, and “Run\_Size” to create a normally distributed arrival curve vector for each salmon run described in “salmon\_run\_info.csv”. From this vector the model can extract the number of salmon from each run that arrive at the Gauntlet on a specific day of the year.

### Escape Rate

Comes from residence time estimates. Specific to each run and gauntlet system. Estimated based on tag data, fisheries catch data, or general local knowledge about fish migration speeds and holding times in estuaries. The escape rate is calculated as the inverse of the estimated residence time. This can be included in “salmon\_run\_info.csv” under column “Residence”. Column “Escape\_Rate” is calculated using “Residence” in the “Prep\_Salmon\_Data.R” script. Escape rate is static for each run throughout each model day.

### Fishery Catch Rate

In this generalized version this is simplified somewhat to a single catch rate that is propogated over a single fishing opener. Inputs for this are: the average daily catch rate “Fish\_Rate”, the day of the year that the fishery opens in yday format “Fishery\_Open”, and the day of the year that the fishery closes in yday format “Fishery\_Close”. These inputs are used to create a vector of daily catch rates for each run in the Gauntlet.

### Natural Mortality Rate

The same daily mortality rate is implemented for each run each day. This can be added to the “set\_pars.R” script in the “RunTheModel” folder.

## Pinnipeds

### Consumption