Salmon Permits for 2017

All data is taken from the permit_records and harvest_records sheets in the original excel document. First we'll check counts:

mailing	count
0	17006
1	3269
2	2041
9	7268
total	29584

```
## [1] 29978.89
```

So we have 7663 estimated non-respondents with mailing = 9. Note: There are 9 permits that have mailing status = 9 and have harvest reported.

Next, to get w_hat, I found the proportion of those with mailing = 1 or 2 that reported fishing. I did this overall, not by fishery.

w_hat
0.6928437

For all of those that had mailing = 2 and reported their harvest, I found the average number of salmon taken at each fishery.

```
## # A tibble: 6 x 5
##   species  `FISH CREEK` KASILOF   KENAI   UNKNOWN
##   <chr>           <dbl>   <dbl>   <dbl>     <dbl>
## 1 chum          0.00217  0.0620  0.0508 0.000544
## 2 coho           0.0149  0.0351  0.0408  0.00163
## 3 flounder       0       0.0323  0.0902  0.00299
## 4 king           0       0.00462 0.0391 0.000815
## 5 pink           0.0149  0.140   0.335   0.00408
## 6 red            0.199   4.01    10.9    0.211
```

Then I multipled that dataframe by the estimated number of nonrespondents that fished (w_hat*7268) resulting in:

```
##           FISH CREEK     KASILOF      KENAI     UNKNOWN
## chum        11.54485   329.02822   269.8609    2.886212
## coho        79.37084   186.16070   216.4659    8.658637
## flounder     0.00000   171.72964   479.1113   15.874168
## king         0.00000    24.53281   207.8073    4.329319
## pink        79.37084   741.75660  1780.7931   21.646593
## red       1057.79686 21311.79268 58046.0616 1122.736641
```

Then we add the above dataframe to the known totals below to get total estimated harvest:

```
##           FISH CREEK KASILOF  KENAI UNKNOWN
## chum              54    1013    832      10
## coho             281     611    728      41
## flounder           1     745   2347      41
```

```
## king                    1       132    1195        19
## pink                  273      2900    7930       105
## red                  4896   100142  296662      4757
```

Just about a match. Need to account for vendor issue, and count blank reports as non-respondents.