Tanner Expansion 2019

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Total reported harvest by permit type and area:

|  |  |  |
| --- | --- | --- |
| areacode | type | crab\_count |
| ABC | SPORT | 320 |
| ABC | SPORT& Subsistence | 12 |
| ABC | SUBSISTENCE | 13 |
| D | SPORT | 208 |
| D | SPORT& Subsistence | 6 |
| D | SUBSISTENCE | 3 |
| E | SPORT | 7039 |
| E | SPORT& Subsistence | 166 |
| E | SUBSISTENCE | 193 |
| E | NA | 359 |

Total number of non-respondents:

|  |  |  |
| --- | --- | --- |
| type | reported | count |
| SPORT | no | 139 |
| SPORT | yes | 1363 |
| SPORT& Subsistence | no | 6 |
| SPORT& Subsistence | yes | 50 |
| SUBSISTENCE | no | 21 |
| SUBSISTENCE | yes | 102 |

So we see that 166 people failed to respond.

Next, we will estimate the number of non-respondents that fished:

First we need to find the proportion of late responders that fished in each area:

## # A tibble: 6 x 3  
## # Groups: areacode [3]  
## areacode late count  
## <chr> <chr> <int>  
## 1 ABC no 67  
## 2 ABC yes 81  
## 3 D no 56  
## 4 D yes 67  
## 5 E no 2192  
## 6 E yes 654

So we will assume the proportion of non-responders that fished in each area is the same as the proportion of late responders that fished in each area.

|  |  |
| --- | --- |
| area | prop\_non\_rspd\_fished |
| ABC | 0.1009975 |
| D | 0.0835411 |
| E | 0.8154613 |

Next, we’ll find the mean harvest per area:

## # A tibble: 3 x 2  
## areacode mean  
## <chr> <dbl>  
## 1 ABC 2.48  
## 2 D 1.73  
## 3 E 2.72

Finally, to find our expanded harvest numbers, we will multiply total non-respondents (sport or subsistence) by the porportion we expected to fish in each area times the average catch. So for example, .

|  |  |  |
| --- | --- | --- |
| areacode | crab\_count\_sport | crab\_count\_sub |
| ABC | 36 | 7 |
| D | 21 | 4 |
| E | 322 | 60 |

Next we’ll estimate standard errors for the above estimates:

|  |  |  |
| --- | --- | --- |
| areacode | stderr\_sport | stderr\_sub |
| ABC | 13 | 2 |
| D | 20 | 4 |
| E | 117 | 22 |