An exploratory data dredge populated with survey specific Charleston Harbor abundance variables to predict Charleston Harbor mean integrated watershed landings CPUE. Ordinary Least Squares multiple regression with no interaction was used to feed the dredge. Variables found in the dataset used to feed the dredge were determined to be the most influential relationships between abundance and landings as determined by analyses unsing the Shiny Application “shinycrab” built by Czwartacki.

## Harbor Trawl

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dependent Variable | Juveniles | Subadults | Subadults (Lag 1 yr.) | Adult | Immature Females | Mature Females | CPUE | p-value | R2 | Adj R2 | AICc  Δ |
| Integrated |  |  | X |  |  | X |  | 0.006474 | 0.6 | 0.5272 | - |
| Charleston |  |  | X | X |  |  |  | 0.006744 | 0.597 | 0.5238 | 0.44 |
| Harbor |  |  |  |  | X |  |  | 0.006398 | 0.4474 | 0.4049 | 1.01 |
| Mean |  |  |  |  | X | X |  | 0.01267 | 0.5172 | 0.4367 | 2.81 |
| Annual |  |  |  | X | X |  |  | 0.01476 | 0.5047 | 0.4222 | 3.19 |
| Landings |  |  | X |  |  |  |  | 0.0204 | 0.349 | 0.2989 | 3.47 |
| CPUE |

Table : Select OLS regression analyses as suggested by MuMIn::dredge function for Harbor Trawl variables only. All models are multiple regression without interaction. Significant interaction between these variables were not found.

## Creek Trawl

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dependent Variable | Juveniles | Subadults | Subadults (Lag 1 yr.) | Adult | Immature Females | Mature Females | CPUE | p-value | R2 | Adj R2 | AICc  Δ |
| Integrated |  |  | X |  |  |  |  | 0.02055 | 0.3483 | 0.2982 | - |
| Charleston |
| Harbor |
| Mean |
| Annual |
| Landings |
| CPUE |

Table 2: Select OLS regression analyses as suggested by MuMIn::dredge function for Creek Trawl variables only

## Trammel Net Survey

|  |  |  |  |
| --- | --- | --- | --- |
| Dependent Variable | CPUE | p-value | R2 |
| Integrated | X | 0.02058 | 0.3762 |
| Charleston |
| Harbor |
| Mean |
| Annual |
| Landings |
| CPUE |

Table 3: Select OLS regression analyses as suggested by “shinycrab” app.R for Trammel Net CPUE

## Total Survey CPUEs ~ Mean Landings CPUE

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dependent Variable | B90 | T06 | T06 + B90 | T38 | T38+B90 Subadults Lag | p-value | R2 | Adj R2 | AICc  Δ |
| Integrated |  |  | X | X |  | 0.004269 | 0.6642 | 0.5971 | - |
| Charleston |  |  | X |  |  | 0.005645 | 0.5165 | 0.4725 | 0.41 |
| Harbor | X |  | X | X |  | 0.002889 | 0.7741 | 0.6988 | 0.42 |
| Mean |  | X | X | X |  | 0.002889 | 0.7741 | 0.6988 | 0.42 |
| Annual | X | X |  | X |  | 0.002889 | 0.7741 | 0.6988 | 0.42 |
| Landings | X |  |  |  |  | 0.02703 | 0.3231 | 0.2711 | 1.49 |
| CPUE |

Table 4: Select OLS regression analyses as suggested by MuMIn::dredge function for total CPUE variables only. Values in red reflect illogical models. All models are multiple regression without interaction. Significant interaction between these variables were not found.

## All Relevant Survey Vars ~ Mean Landings CPUE

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dependent Variable | B90 Adult | B90 Immature Females | B90  Mature Females | B90  Subadult  Lag | T38 CPUE | T38 Subadult Lag | T38+B90 Subadults Lag | p-value | R2 | Adj R2 | Dredge AICc Δ |
| Integrated |  | X |  |  |  |  |  | 0.006398 | 0.4474 | 0.4049 | - |
| Charleston |  |  | X | X |  |  |  | 0.004123 | 0.5996 | 0.5328 | 0.47 |
| Harbor | X |  |  | X |  |  |  | 0.01276 | 0.6114 | 0.5054 | 0.58 |
| Mean |  |  | X |  |  |  | X | 0.005164 | 0.5842 | 0.515 | 0.79 |
| Annual | X |  |  |  |  |  | X | 0.006554 | 0.5674 | 0.4953 | 1.21 |
| Landings |  |  |  |  |  |  | X | 0.01234 | 0.3933 | 0.3466 | 1.53 |
| CPUE |  | X | X |  |  |  |  | 0.01267 | 0.5172 | 0.4367 | 1.76 |
|  | X | X |  |  |  |  |  | 0.01476 | 0.5047 | 0.4222 | 1.91 |

Table 5: Select OLS regression analyses as suggested by MuMIn::dredge function for all relevant variables. Values in red reflect illogical models. All models are multiple regression without interaction. Significant interaction between these variables were not found.