Age-Length Key Application

Source the Previous Script

```
> # Appropriately set the working directory before this
> # This also ran library(FSA) which also provides alkIndivAge(), Summarize(), hist(), col2rgbt()
> source("../scripts/ALK_Construction.R")
> ls()
 [1] "ALK.obs"    "ALK.sm"     "hook1"      "lblTL"      "lens"       "mlr"        "raw"
 [8] "sp.age"     "sp.age.mod" "sp.len"     "SpotVA2"    "tmp"
```

```
> headtail(sp.len)
     tl age
1   9.6  NA
2   9.4  NA
3   9.1  NA
329 9.6  NA
330 7.5  NA
331 7.4  NA
```

Apply ALK using Isermann-Knight Method

```
> sp.len.mod <- alkIndivAge(ALK.obs,age~tl,data=sp.len)
> headtail(sp.len.mod)
     tl age
1   9.6   2
2   9.4   1
3   9.1   2
329 9.6   1
330 7.5   1
331 7.4   1
```

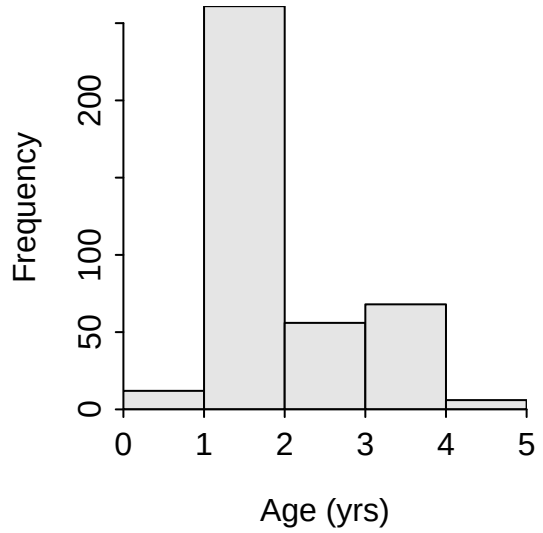
```
> sp.comb <- rbind(sp.age,sp.len.mod)
> str(sp.comb)
'data.frame':   403 obs. of  2 variables:
 $ tl : num  10.6 7.1 12.3 9.7 11.2 8.9 12.6 7.6 10 7 ...
 $ age: num  1 1 3 2 3 1 3 1 1 1 ...
```

Summarize Final Results

```
> ( agefreq <- xtabs(~age,data=sp.comb) )
age
  0   1   2   3   4
 12 261  56  68   6
```

```
> prop.table(agefreq)
age
         0          1          2          3          4
0.02977667 0.64764268 0.13895782 0.16873449 0.01488834
```

```
> hist(~age,data=sp.comb,w=1,xlab="Age (yrs)")
```




```
> ( sp.sum <- Summarize(tl~age,data=sp.comb,digits=2) )
Warning: RHS variable was converted to a factor.
  age   n nvalid  mean   sd  min    Q1 median    Q3  max percZero
1   0  12     12  8.16 0.86  6.3  8.15    8.5  8.62  8.9        0
2   1 261    261  9.07 1.17  7.0  8.20    9.0  9.90 12.4        0
3   2  56     56 11.06 1.15  9.0  9.80   11.3 12.00 12.9        0
4   3  68     68 12.04 0.86 11.0 11.30   11.7 12.80 13.9        0
5   4   6      6 13.22 0.49 12.6 12.90   13.2 13.50 13.9        0
```

```
> plot(tl~age,data=sp.comb,ylab=lblTL,xlab="Age (yrs)",pch=19,col=col2rgbt("black",1/10))
> lines(mean~fact2num(age),data=sp.sum,col="blue",lwd=2)
```