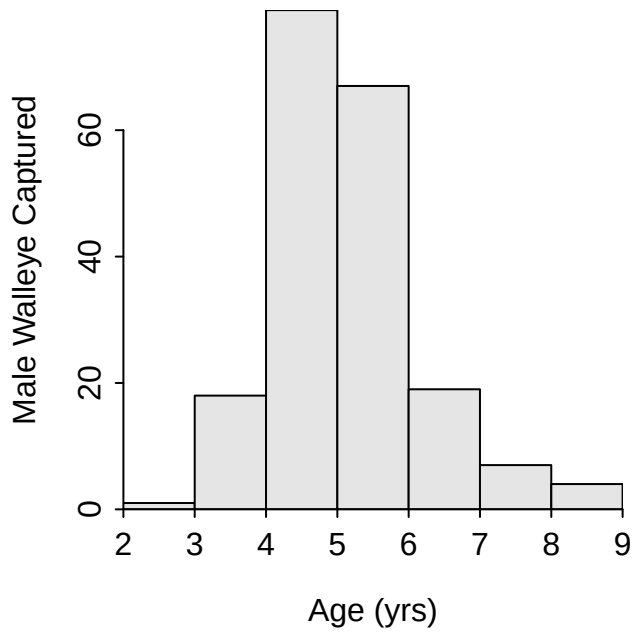
# Summarizing Age Data

*Derek H. Ogle, Northland College*

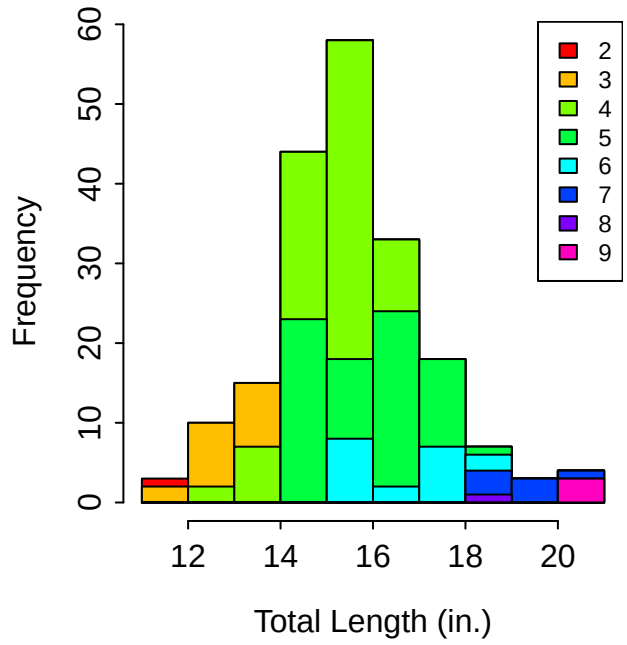
*5-Mar-2015*

## Preliminaries

```
> # clears objects in R workspace
> rm(list = ls())

> # sourceing the script that constructed and applied the ALK
> # may need to adjust if you named your script differently
> source("02_AgeLengthKey.R")

> # to demonstrate what is in the workspace after the sourceing
> ls()
[1] "waeF.fnl" "waeM.fnl"

> hist(~Age..observed.annuli.,data=waeM.fnl,xlab="Age (yrs)",ylab="Male Walleye Captured")
```

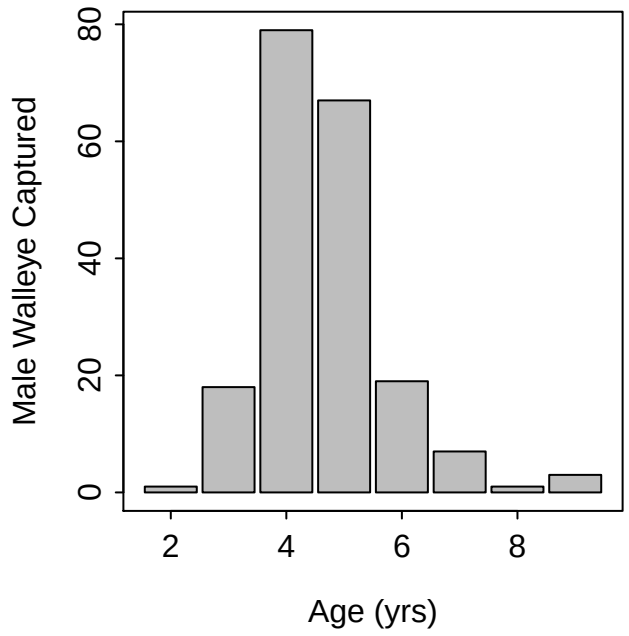


```
> histStack(Length.or.Lower.Length.IN~Age..observed.annuli.,data=waeM.fnl,xlab="Total Length (in.)",
            right=FALSE,legend.pos="topright")
Warning in histStack.default(mf[, 1], mf[, 2], breaks = breaks, col = col, : z was converted to a
factor
```

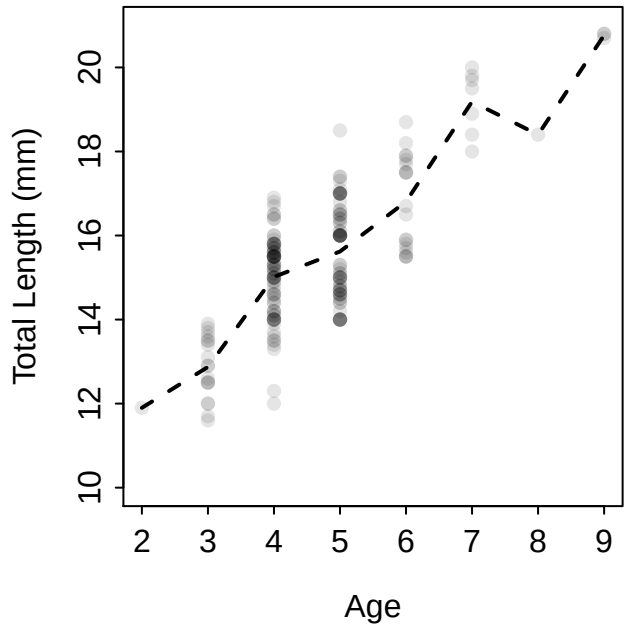



```
> waeM.sumlen <- waeM.fnl %>%
   group_by(Age..observed.annuli.) %>%
   summarize(n=n(),mean=mean(Length.or.Lower.Length.IN),sd=sd(Length.or.Lower.Length.IN),
             min=min(Length.or.Lower.Length.IN),max=max(Length.or.Lower.Length.IN))
> waeM.sumlen
Source: local data frame [8 x 6]

  Age..observed.annuli.  n     mean         sd  min  max
1                     2  1 11.90000        NaN 11.9 11.9
2                     3 18 12.87222 0.73788693 11.6 13.9
3                     4 79 15.01519 0.96809204 12.0 16.9
4                     5 67 15.61940 1.10635065 14.0 18.5
5                     6 19 16.80526 1.09821759 15.5 18.7
6                     7  7 19.18571 0.76469726 18.0 20.0
7                     8  1 18.40000        NaN 18.4 18.4
8                     9  3 20.76667 0.05773503 20.7 20.8
```

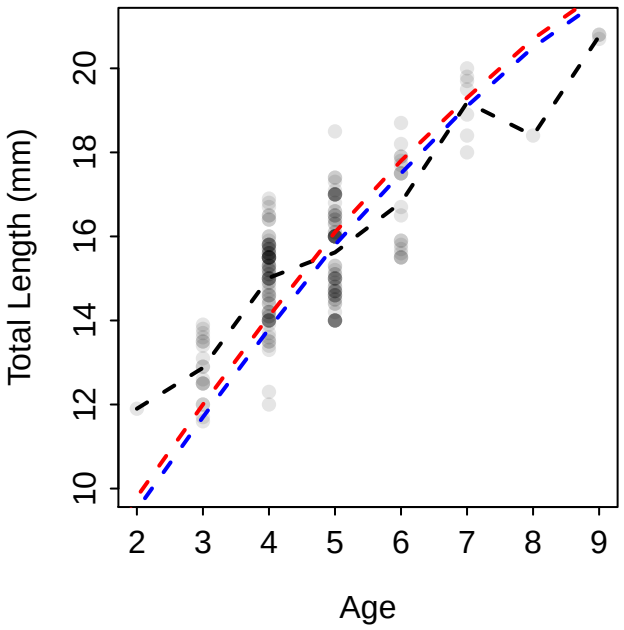
```
> plotH(n~Age..observed.annuli.,data=waeM.sumlen,xlab="Age (yrs)",ylab="Male Walleye Captured",
        xlim=c(1.5,9.5),width=0.9)
```




```
> plot(Length.or.Lower.Length.IN~Age..observed.annuli.,data=waeM.fnl,pch=16,col=rgb(0,0,0,1/10),
       xlab="Age",ylab="Total Length (mm)",ylim=c(10,21))
> lines(mean~Age..observed.annuli.,data=waeM.sumlen,lwd=2,lty=2)
```



```
> plot(Length.or.Lower.Length.IN~Age..observed.annuli.,data=waeM.fnl,pch=16,col=rgb(0,0,0,1/10),
       xlab="Age",ylab="Total Length (mm)",ylim=c(10,21))
> lines(mean~Age..observed.annuli.,data=waeM.sumlen,lwd=2,lty=2)
>
> wae.JM <- data.frame(age=1:17,
                       state=c(6.5,9.8,12.0,14.1,16.1,17.8,19.3,20.7,21.8,
                               22.9,23.8,24.5,25.1,25.9,25.5,25.8,25.2),
                       NOR=c(6.4,9.5,11.7,13.8,15.8,17.5,19.1,20.5,21.6,
                             22.7,23.7,24.4,25.2,25.8,25.6,25.6,NA))
> lines(state~age,data=wae.JM,lwd=2,lty=2,col="red")
> lines(NOR~age,data=wae.JM,lwd=2,lty=2,col="blue")
```




## Construct and Apply an Age-Length Key – Females

Copy the code from above and convert the 'M's to 'F's

## Application Assignment

Create a script that performs the following tasks:

1. Continue or `source()` your script from the previous handout.
2. Summarize the age distribution from all of the fish in your sample.
3. Show the mean length-at-age for all fish in your sample in both tabular and graphical forms.

4. (*Time Permitting*) Show the length frequency for all fish in your sample.
5. (*Time Permitting*) Repeat the above for your second sex or species.

**Save your script!**