

Very Quick R Basics

Load Necessary Packages

```
> library(FSA) # for mrClosed()
```

Expressions, Assignments, and Objects

```
> 3+4*2  
[1] 11
```

```
> res <- 3+4*2  
> res  
[1] 11
```

```
> ( res <- (2+3)*(7+2) )  
[1] 45
```

Functions

Names and Arguments

```
> sqrt(17)  
[1] 4.123106
```

```
> ( res <- sqrt(17) )  
[1] 4.123106
```

```
> dat <- c(3,6,8,3,5,6,2,7,6,8,2,10)  
> mean(dat)  
[1] 5.5
```

```
> mean(dat,trim=0.1)  
[1] 5.4
```

Constructor and Extractor Functions

```
> mr1 <- mrClosed(M=346,n=184,m=49,method="Chapman")  
> ## mr1  
> summary(mr1)  
      N  
[1,] 1283
```

```
> summary(mr1,verbose=TRUE)
Used Chapman's modification of the Petersen method with M=346, n=184, and m=49.
      N
[1,] 1283

> confint(mr1,verbose=TRUE)
The binomial distribution was used.
      95% LCI 95% UCI
[1,]    1024    1640
```

Vectors

Data Types

```
> ( lake <- c("Deep","Long","Star","Twin") )
[1] "Deep" "Long" "Star" "Twin"

> ( numSpec <- c(4,8,7,3) )
[1] 4 8 7 3

> ( maxDepth <- c(6.5,7.8,3.8,25.6) )
[1] 6.5 7.8 3.8 25.6

> ( springFed <- c(TRUE,FALSE,FALSE,TRUE) )
[1] TRUE FALSE FALSE TRUE
```

Selecting Individuals (by Position)

```
> lake[1]
[1] "Deep"

> lake[2]
[1] "Long"

> lake[-1]
[1] "Long" "Star" "Twin"

> lake[2,3,4]
Error in lake[2, 3, 4]: incorrect number of dimensions

> lake[c(2,3,4)]
[1] "Long" "Star" "Twin"
```

Selecting Individuals (by Condition)

```
> lake[c(TRUE,FALSE,FALSE,TRUE)]  
[1] "Deep" "Twin"
```

```
> lake=="Star"  
[1] FALSE FALSE  TRUE FALSE
```

```
> maxDepth[lake=="Star"]  
[1] 3.8
```

```
> numSpec[maxDepth<7]  
[1] 4 7
```