

MARK - for the computationally challenged (me)1. Illustration of the Skalski Rabbit Data.

## MARK Icon

Click on New under File (Open gives you previous analyses)

Click on Closed Captures

Then Closed Captures again in next window

Now you get an important window to begin analysis

- Give title Skalski Rabbit Data

- Select File to Find Input File

- rabbit1.inp looks like this

```
/* Skalski rabbit data */ - comment line
```

```
11 7;
```

```
10 77;
```

```
01 7;
```

} capture history lines - always end with ;

Aside: You will have to create and save your input files in Notepad. Make sure that you put the file title in quotes i.e. "rabbit1.inp" so that it saves the ending. MARK only recognises .inp files.

- Specify that 2 occasions, 1 group, 0 covariates

- Click OK

Now get to the PIMS window (Parameter Index Matrix)

TILE

- Open all PIMS capture prob, recapture prob, popn size

- Specify LP formulation by

$C = p_2$  means 3 to 2

Relabel popn size 4 to 3

There are 3 parameters

Run

Current Model

p(t) - Model Name

Click on OK to Run

Use an identity design matrix - yes

append this to output -- - yes

Results Browser now appears with AIC,  $\Delta AIC$  etc

Click on Icon to view estimates of real parameters

1 : p	0.5201	- - -
2 : p	0.0867	- - -
3 : N	161.5092	40.4146 - - -

Now lets run another model

Fit submodel where p's are equal (now only 2 parameters)

$p_1 = p_2$  2 to 1, 3 to 2 relabels popn size.

Run

Current Model

p(.) Model Name

OK to Run

Use identity matrix - yes

append output - yes

\* Looking at output - much worse AIC here because

$p_1 \neq p_2$ . Nonsensical estimates

1 p	0.14	- - -
2 N	336.50	

Conclusion: We have run the rabbit data, compared two models, chose the best one and hence completed the analysis  $N = 161.5092$   $SE(\hat{N}) = 40.4146$ .

## 2. Insect Data - New two groups (Males & Females)

(3)

Input file looks like this

10	63	76;
61	25	37;
11	14	19;
↑	↑	↑
capture history	Males # indivs	females # indivs

### Highlights

- When you get to the PIMS Matrices, there are 6 of them.
- I will show you how to create a variety of models by working with the PIMS.
- Compare by AIC
- Find a Best Model
- Get Results for Best Model.

## 3. Accessing CAPTURE from MARK

Open existing analysis in MARK Examples provided with Program  
CAROTHERS SCHEME A.DBF

A lot of analyses are shown which I won't get into

Click on Tests at the Top

At bottom of list program CAPTURE - click

Click on What Models you want to Run

Click OK

The CAPTURE output appears

Scroll through it to see many of the results I showed earlier.