Bayesian population analysis using WinBUGS - a hierarchical perspective

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List with errata

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1. page 55, line 7:
   Wrong:
   $\eta_i = \log(\mu_i) / \log(1-\mu_i))$
   Correct:
   $\eta_i = \log(\mu_i / (1-\mu_i))$

2. page 184:
   Wrong:
   ```
   for (t in 1:n.occasions-1)){
   ```
   Correct:
   ```
   for (t in 1:(n.occasions-1)){
   ```

3. pages 275, 280, 281, 286, 292, 299, 305 and 310:
   Wrong:
   ```
   # Define latent state at first capture
   z[i,f[i]] <- Y[i,f[i]]
   ```
   Correct:
   ```
   # Define latent state at first capture
   z[i,f[i]] <- y[i,f[i]]
   ```

4. page 351:
   Wrong:
   $$E\left(N_{1,t+1} \middle| N_{1,t}, N_{ad,t}\right) = N_{1,t} S_{juv,t} \frac{f_t}{2} + N_{ad,t} S_{ad,t} \frac{f_t}{2}$$
   Correct:
   $$E\left(N_{1,t+1} \middle| N_{1,t}, N_{ad,t}\right) = N_{1,t} S_{juv,t} \frac{f_t}{2} + N_{ad,t} S_{juv,t} \frac{f_t}{2}$$

5. page 352:
   Wrong:
   $$N_{1,t} S_{juv,t} f_t/2 + N_{ad,t} S_{ad,t} f_t/2$$
   Correct:
   $$N_{1,t} S_{juv,t} f_t/2 + N_{ad,t} S_{juv,t} f_t/2$$

   Wrong (occurs 2 times):

$$N_{1,t+1} \sim Poisson\left(N_{1,t}S_{juv,t}\frac{f_t}{2} + N_{ad,t}S_{ad,t}\frac{f_t}{2}\right)$$

Correct:

$$N_{1,t+1} \sim Poisson\left(N_{1,t}S_{juv,t}\frac{f_t}{2} + N_{ad,t}S_{juv,t}\frac{f_t}{2}\right)$$

6. page 443:

Wrong:

```
# Initial values
Zst <- apply(y, c(1, 3), max)    # Observed occurrence as inits for z
```

Correct:

```
# Initial values
zst <- apply(y, c(1, 3), max)    # Observed occurrence as inits for z
```

7. page 455:

Wrong:

```
# Bundle data
y <- as.matrix(owls[, 2:6])
y <- y + 1
win.data <- list(y = y, R = dim(Y)[1], T = dim(Y)[2])
```

Correct:

```
# Bundle data
y <- as.matrix(owls[, 2:6])
y <- y + 1
win.data <- list(y = y, R = dim(y)[1], T = dim(y)[2])
```

8. page 309:

Wrong:

```
# Define state-transition and observation matrices
for (i in 1:nind)
```

Correct:

```
# Define state-transition and observation matrices
for (i in 1:nind){
```

9. page 301:

Wrong:

	site A	site B	site C	dead
site A	$\phi_A(1-\psi_{AB}-\psi_{AC})$	$\phi_A\psi_{AB}$	$\phi_A\psi_{AB}$	$1-\phi_A$
site B	$\phi_B\psi_{BA}$	$\phi_B(1-\psi_{BA}-\psi_{BC})$	$\phi_B\psi_{BC}$	$1-\phi_B$
site C	$\phi_C\psi_{CA}$	$\phi_C\psi_{CB}$	$\phi_C(1-\psi_{CA}-\psi_{CB})$	$1-\phi_C$
dead	0	0	0	1

,

Correct:

$$
\begin{array}{c}
 \\
\text{site A} \\
\text{site B} \\
\text{site C} \\
\text{dead}
\end{array}
\begin{array}{c}
\begin{array}{cccc}
\text{site A} & \text{site B} & \text{site C} & \text{dead}
\end{array} \\
\begin{bmatrix}
\phi_A(1-\psi_{AB}-\psi_{AC}) & \phi_A\psi_{AB} & \phi_A\psi_{AC} & 1-\phi_A \\
\phi_B\psi_{BA} & \phi_B(1-\psi_{BA}-\psi_{BC}) & \phi_B\psi_{BC} & 1-\phi_B \\
\phi_C\psi_{CA} & \phi_C\psi_{CB} & \phi_C(1-\psi_{CA}-\psi_{CB}) & 1-\phi_C \\
0 & 0 & 0 & 1
\end{bmatrix}
\end{array}
$$

10. pages 448–450:

The model with constant *p* is specified slightly incorrectly: there is no "link" between the data on the first day and the parameters, so the occupancy parameter for the first day simply samples the uniform(0,1) prior. One way to correct is to add the following two lines

```
muy[i,1] <- z[i,1]*p
y[i,1] ~ dbin(muy[i,1], 2)
```

after this line:

```
z[i,1] ~ dbern(psi1)      # State model 1: Initial state
```

Thus, the text at the bottom of p. 449 and the top of p. 450 is mostly obsolete. Moreover, the correct Fig. 13.12. has first-day occupancy estimates quite similar to those for the second day.

11. page 227:

Wrong:

```
# Define matrices with survival and recapture probabilities
…
for (i in 1:(length(marked.j)-1)){
```

Correct:

```
for (i in 1:length(marked.j)){
```