BUGS and R code

#########################

# White and Pagano Model #

#########################

model{

for (k in 1:K) {

 p[k] <- delta[k] / sum(delta[])

 delta[k] ~ dgamma(alpha[k],1)

}

for (j in 1:K) {

 w[j] <- j

}

mu<- inprod(w[],p[])

for (i in K:(T, 1+K)) {

 Ns[i]<- N[i, K+1]

}

for (i in 1:(K, 1)) {

 Ns[i]<- 0

}

for (t in 1:T) {

 for (j in 1:K) {

 NN[t,j]<- Ns[t, j+K]

} }

for (t in 1:T) {

 muN[t+1]<- R\*inprod(NN[t,],p[])

}

 for (t in 2:T) {

 M[t, 1] ~ dpois(muN[t])

 }

log(R) <- logR

logR ~ dnorm(0,1.0E, 6)

}

#############################

# R code with BRUGS Package #

#############################

library(BRugs)

for (i in 1:300){

modelCheck("Model.txt")

modelData(“Data.txt”)

modelCompile(1)

modelInits(“Initials.txt”)

samplesSet(c('mu', 'p', 'R'))

modelUpdate(20000, thin=20)

samplesSetBeg(10000)

samplesSetEnd(20000)

sumstats11[[i]] <- samplesStats('\*')

means11[[i]] <- sumstats11[[i]][,1]

R = samplesSample('R')

mu = samplesSample('mu')

p1 = samplesSample('p[1]')

p2 = samplesSample('p[2]')

p3 = samplesSample('p[3]')

p4 = samplesSample('p[4]')

p5 = samplesSample('p[5]')

post.samples = data.frame(R, mu, p1, p2, p3, p4, p5)

}