



**Figure S2** Comparison of INLA and MCMC. INLA (solid line) and MCMC estimates (histogram) for different number of iterations for MCMC for the posterior marginal of  $\sigma_u^2$  and  $\sigma_e^2$  for the bill depth of house sparrows in northern Norway: 10000 iterations (A)  $\sigma_u^2$  and (B)  $\sigma_e^2$ , 100000 iterations (C)  $\sigma_u^2$  and (D)  $\sigma_e^2$ , 200000 iterations (E)  $\sigma_u^2$  and (F)  $\sigma_e^2$ . INLA used 7 seconds and MCMC used 51 seconds, 8.4 minutes and 17 minutes, respectively.