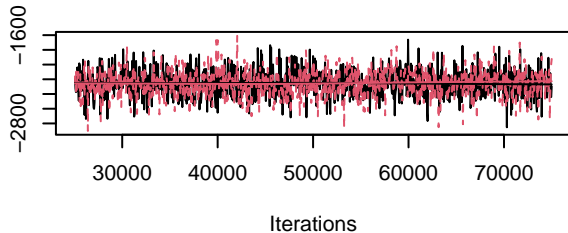


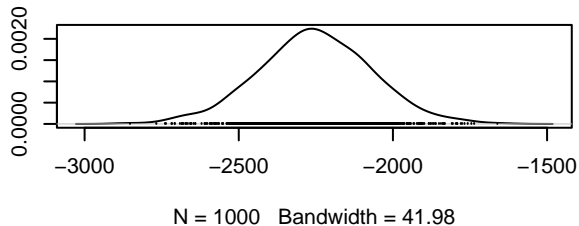
**Supporting information to 'Northeast Atlantic elasmobranch community on the move: functional reorganisation in response to climate change'.**

**Appendix S3 – Chain mixing**

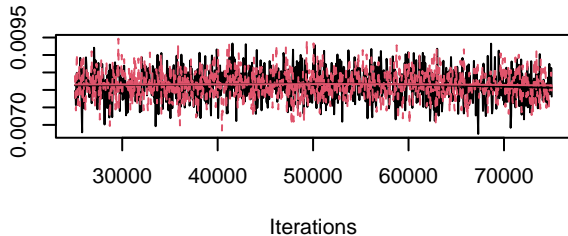
Trace of B[(Intercept) (C1), Amblyraja\_radiata (S1)]



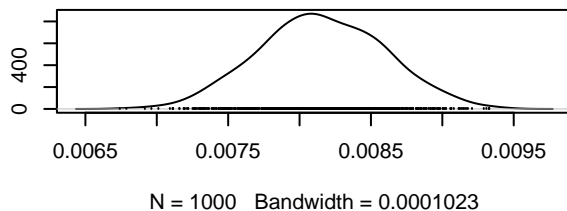
Density of B[(Intercept) (C1), Amblyraja\_radiata (S1)]



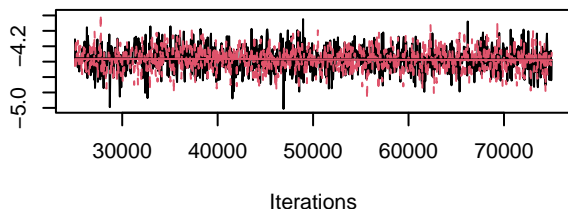
Trace of B[depth (C2), Amblyraja\_radiata (S1)]



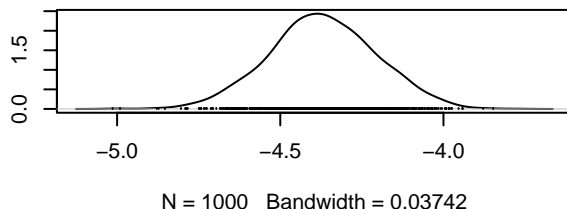
Density of B[depth (C2), Amblyraja\_radiata (S1)]



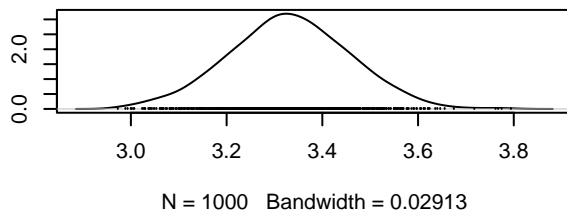
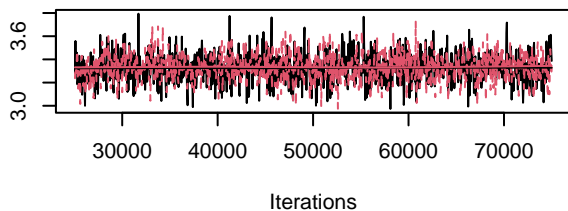
Trace of B[slope (C3), Amblyraja\_radiata (S1)]



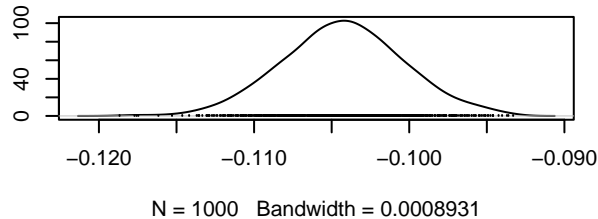
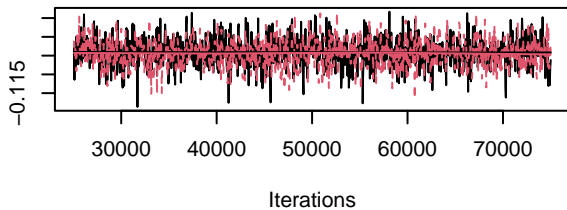
Density of B[slope (C3), Amblyraja\_radiata (S1)]



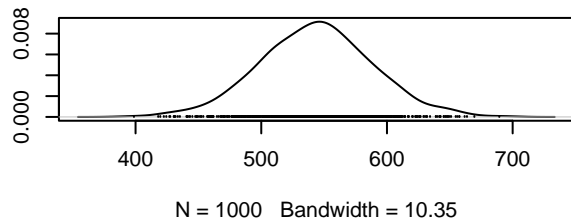
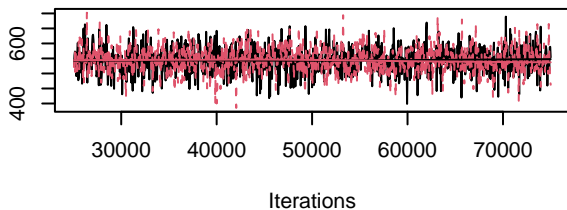
y(max\_SST\_summer, degree = 2, raw = T)1 (C4), Amblyy(max\_SST\_summer, degree = 2, raw = T)1 (C4), Ambly



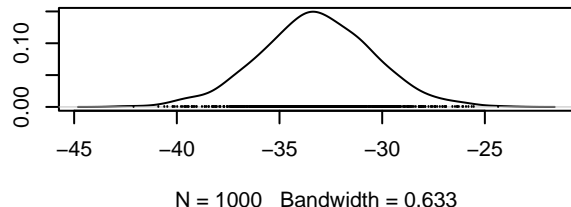
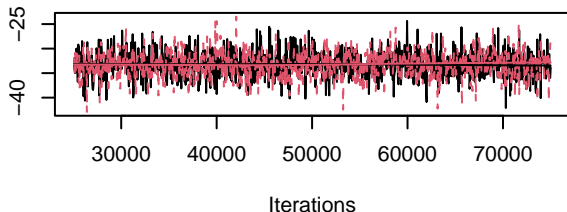
ly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Amblyly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Amblyly(max\_SST\_summer, degree = 2, raw = T)2 (C5)



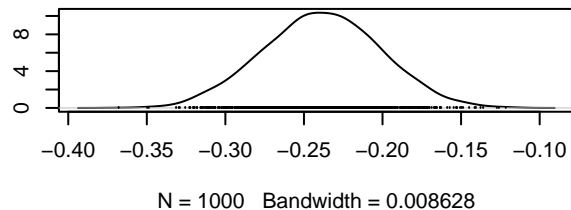
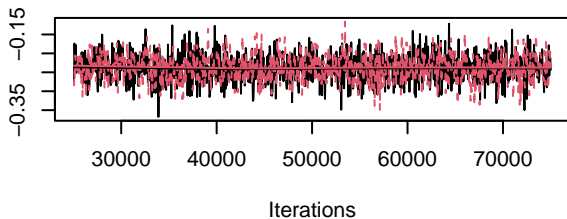
ly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Amblyly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Amblyly(max\_ph\_summer, degree = 2, raw = T)1 (C6)



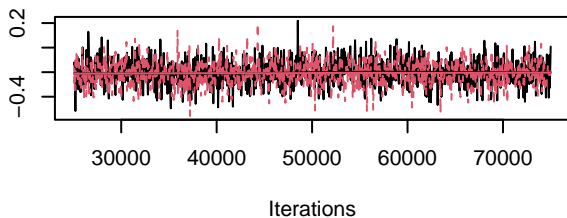
ly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Amblyly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Amblyly(max\_ph\_summer, degree = 2, raw = T)2 (C7)



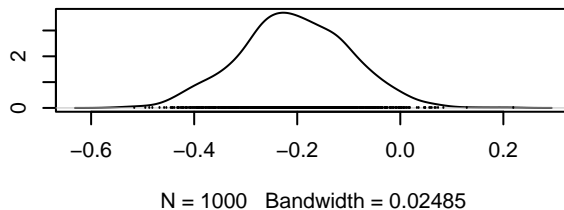
ly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Amblyly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Amblyly(max\_ph\_summer, degree = 2, raw = T)2 (C7)



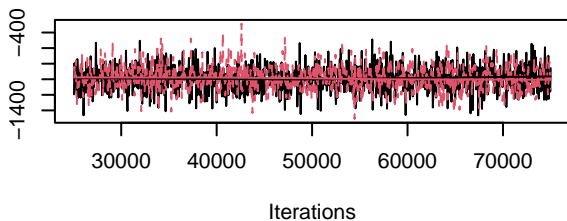
**Trace of B[AMO (C9), Amblyraja\_radiata (S1)]**



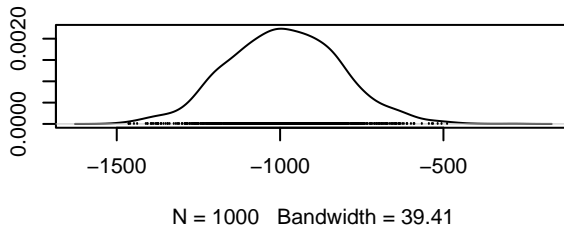
**Density of B[AMO (C9), Amblyraja\_radiata (S1)]**



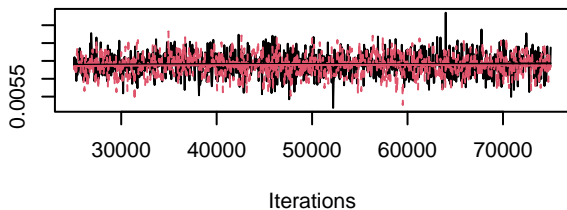
**Trace of B[(Intercept) (C1), Leucoraja\_naevus (S2)]**



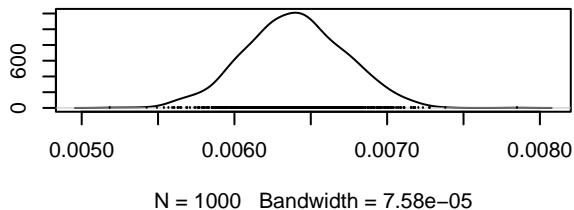
**Density of B[(Intercept) (C1), Leucoraja\_naevus (S2)]**



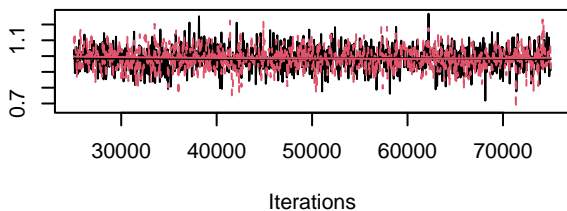
**Trace of B[depth (C2), Leucoraja\_naevus (S2)]**



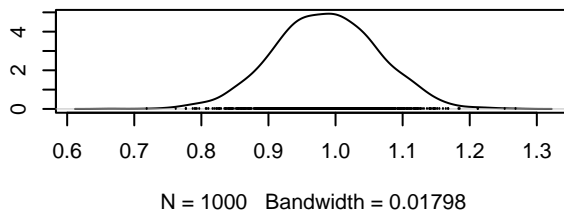
**Density of B[depth (C2), Leucoraja\_naevus (S2)]**



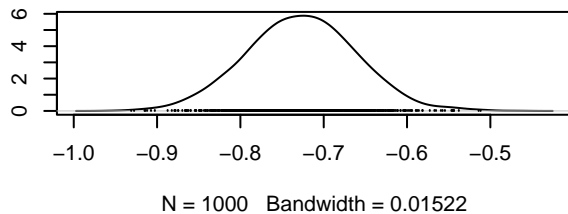
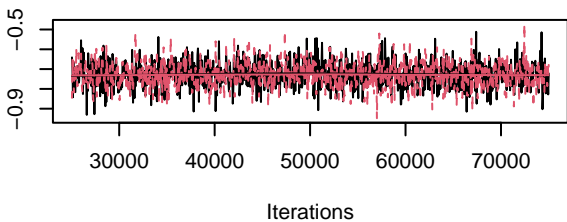
**Trace of B[slope (C3), Leucoraja\_naevus (S2)]**



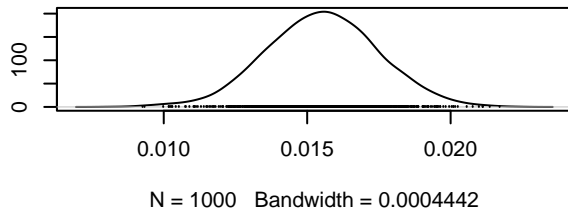
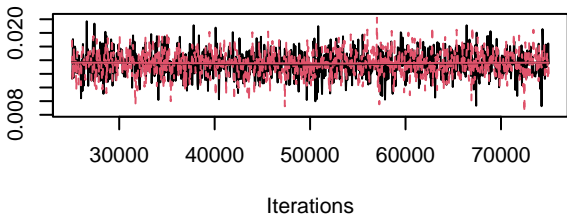
**Density of B[slope (C3), Leucoraja\_naevus (S2)]**



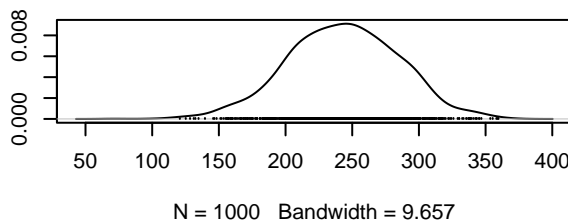
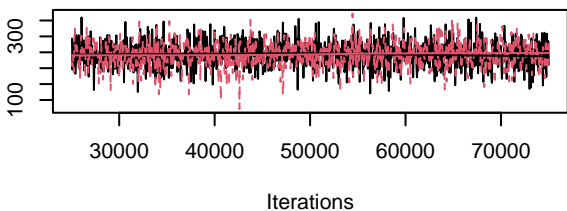
ly(max\_SST\_summer, degree = 2, raw = T)1 (C4), Leucoly(max\_SST\_summer, degree = 2, raw = T)1 (C4), Leuc



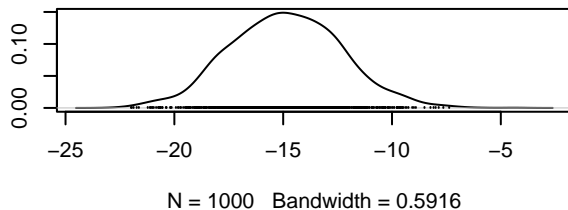
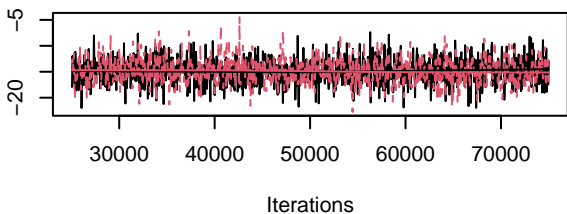
ly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Leucoly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Leuc



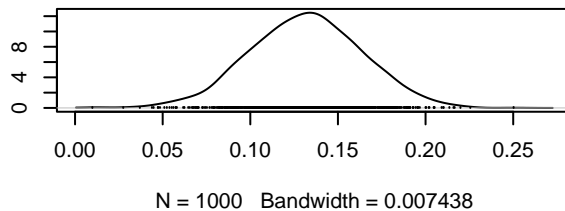
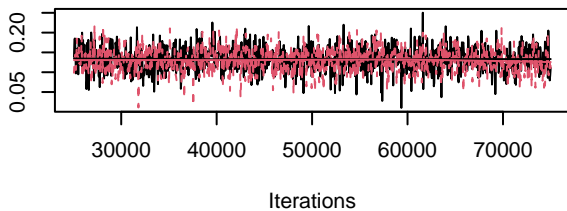
ly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Leucoly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Leuc



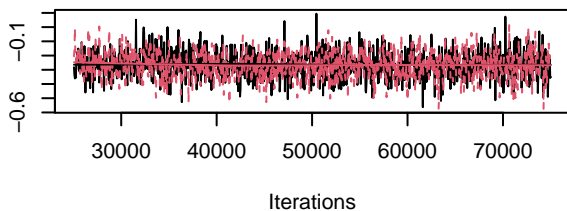
ly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Leucoly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Leuc



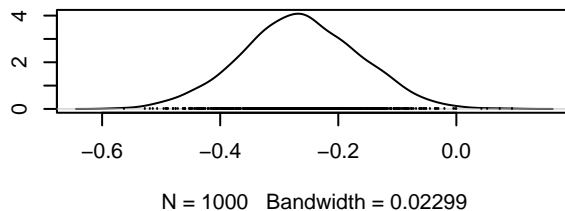
Trace of B[substrate\_diversity (C8), Leucoraja\_naevus] Density of B[substrate\_diversity (C8), Leucoraja\_naevus]



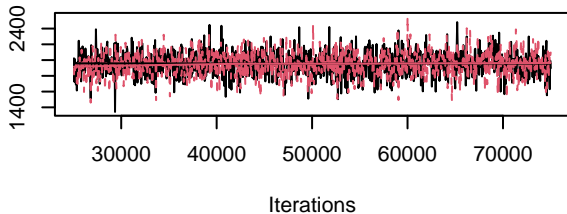
Trace of B[AMO (C9), Leucoraja\_naevus (S2)]



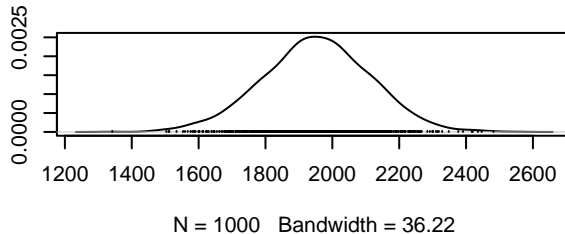
Density of B[AMO (C9), Leucoraja\_naevus (S2)]



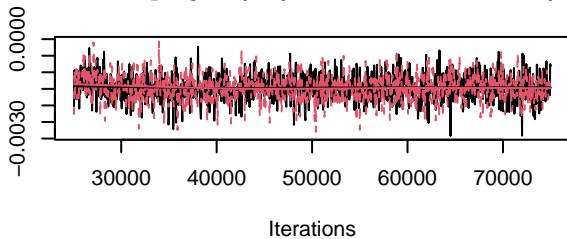
Trace of B[(Intercept) (C1), Mustelus\_asterias (S3)]



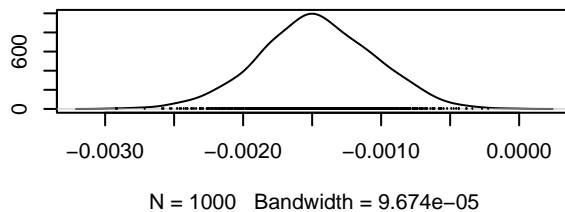
Density of B[(Intercept) (C1), Mustelus\_asterias (S3)]



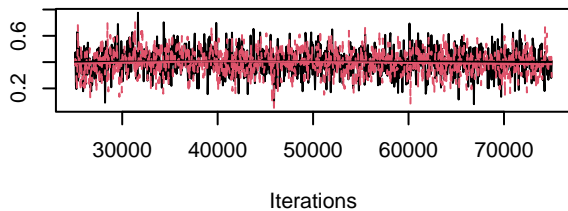
Trace of B[depth (C2), Mustelus\_asterias (S3)]



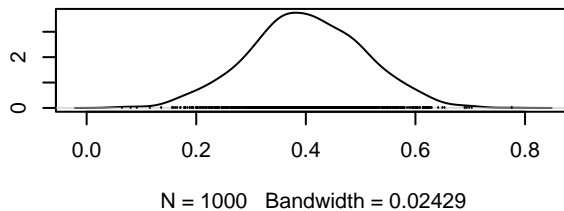
Density of B[depth (C2), Mustelus\_asterias (S3)]



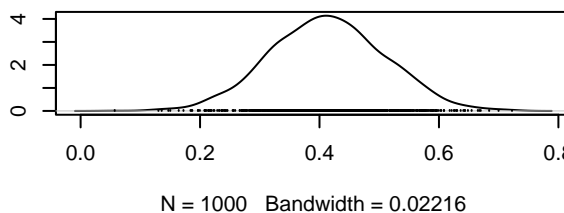
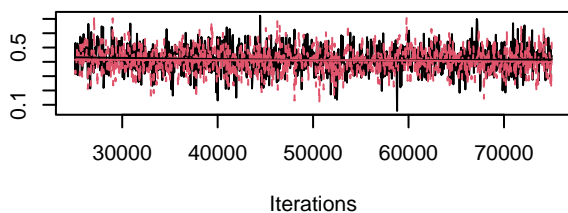
Trace of B[slope (C3), Mustelus\_asterias (S3)]



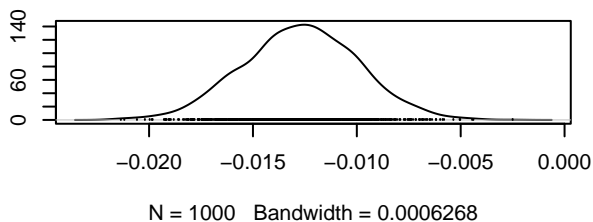
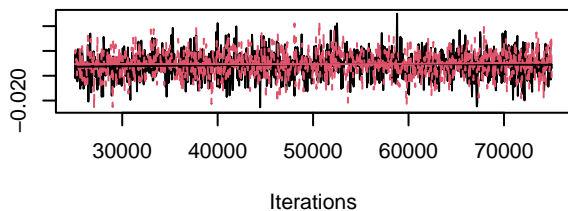
Density of B[slope (C3), Mustelus\_asterias (S3)]



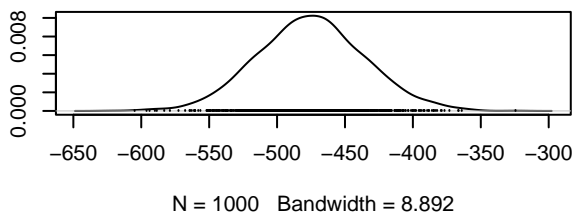
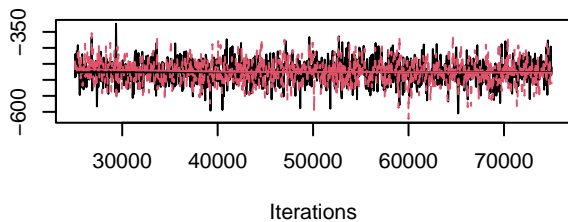
y(max\_SST\_summer, degree = 2, raw = T)1 (C4), Mustly(max\_SST\_summer, degree = 2, raw = T)1 (C4), Mus



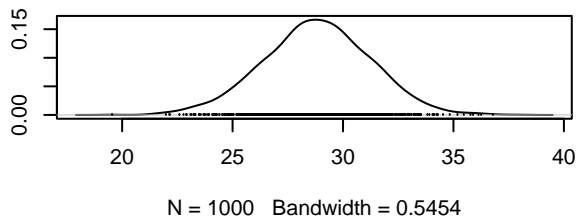
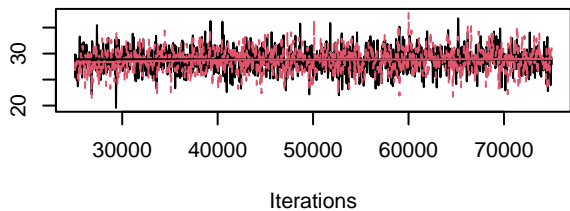
y(max\_SST\_summer, degree = 2, raw = T)2 (C5), Mustly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Mus



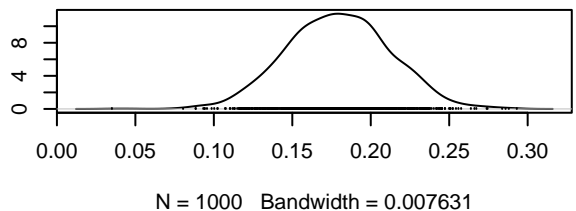
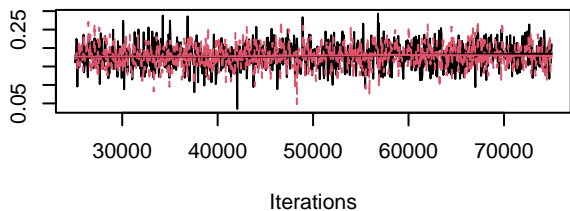
y(max\_ph\_summer, degree = 2, raw = T)1 (C6), Mustly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Must



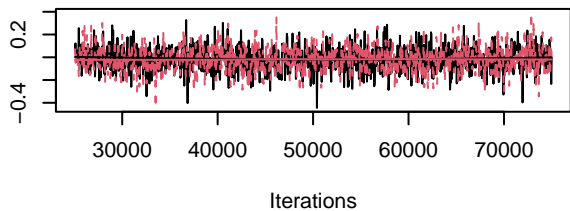
Trace of B[*max\_ph\_summer* (C7), *Mustelus\_asterias*] (C7), Mustelus\_asterias (S3)



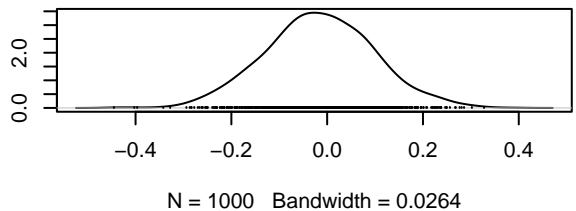
Trace of B[*substrate\_diversity* (C8), *Mustelus\_asterias*] (C8), Mustelus\_asterias (S3)



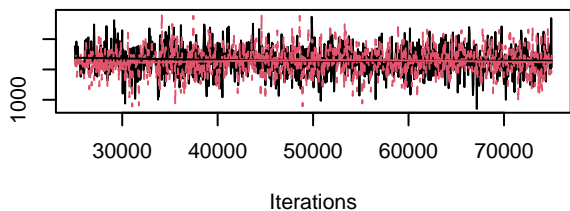
Trace of B[*AMO* (C9), *Mustelus\_asterias*] (S3)



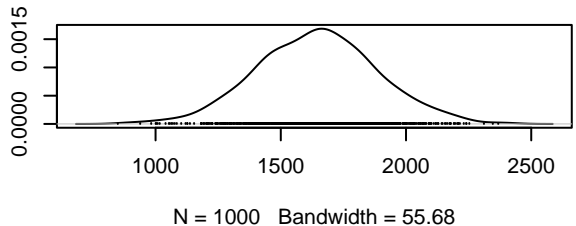
Density of B[*AMO* (C9), *Mustelus\_asterias*] (S3)



Trace of B[(Intercept) (C1), *Raja\_brachyura*] (S4)

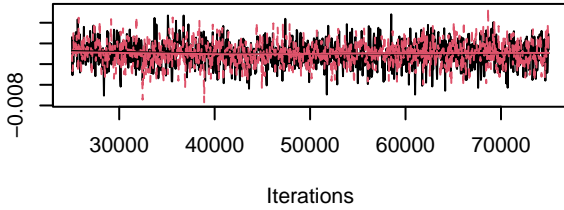


Density of B[(Intercept) (C1), *Raja\_brachyura*] (S4)

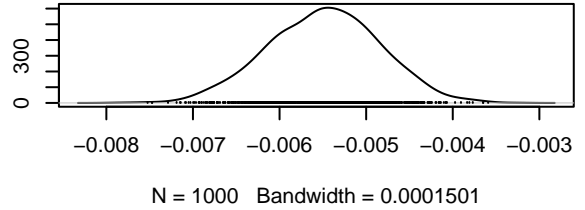




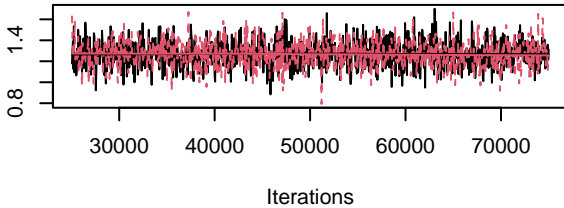
**Trace of B[depth (C2), Raja\_brachyura (S4)]**



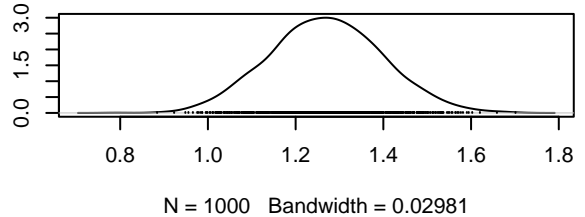
**Density of B[depth (C2), Raja\_brachyura (S4)]**



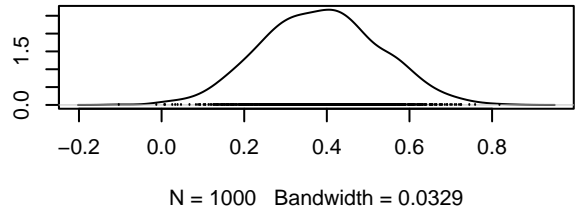
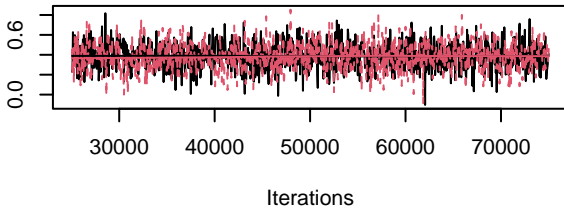
**Trace of B[slope (C3), Raja\_brachyura (S4)]**



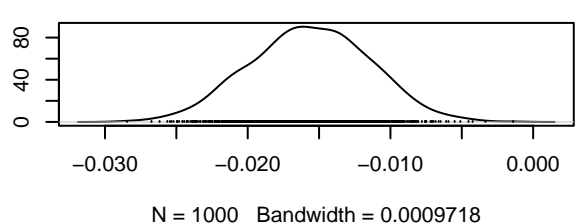
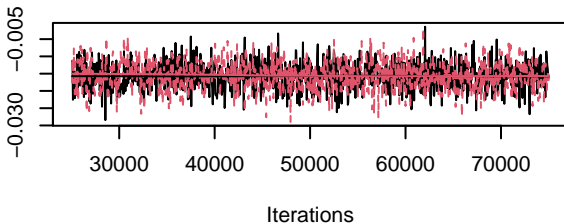
**Density of B[slope (C3), Raja\_brachyura (S4)]**



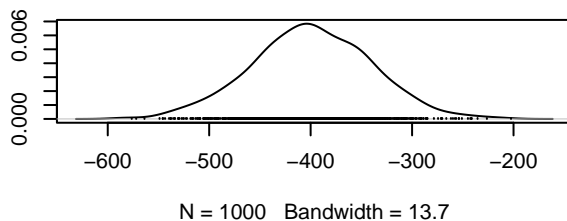
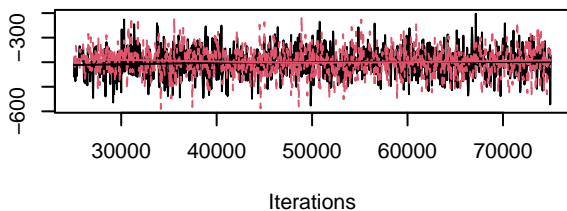
**ly(max\_SST\_summer, degree = 2, raw = T)1 (C4), Rajoly(max\_SST\_summer, degree = 2, raw = T)1 (C4), Ra**



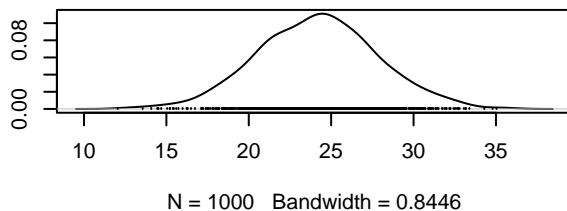
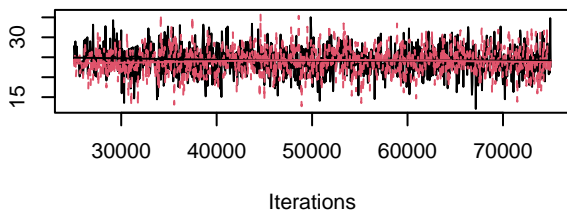
**ly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Rajoly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Ra**



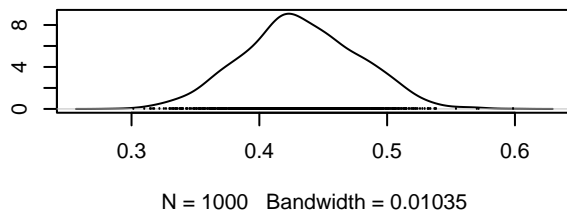
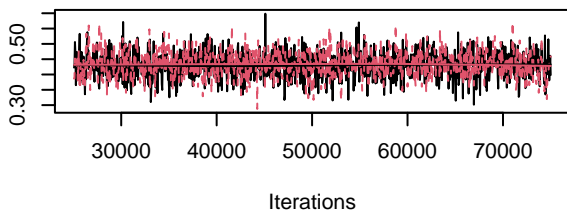
poly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Rajaopoly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Raja



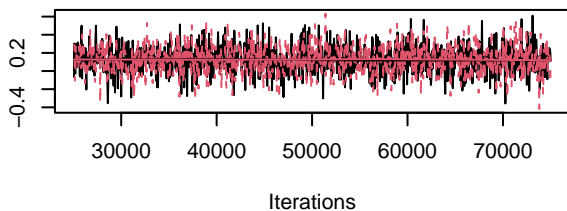
poly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Rajaopoly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Raja



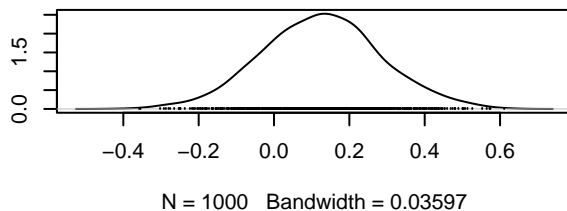
Trace of B[substrate\_diversity (C8), Raja\_brachyura (density of B[substrate\_diversity (C8), Raja\_brachyura



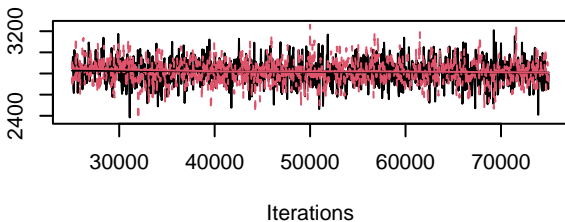
Trace of B[AMO (C9), Raja\_brachyura (S4)]



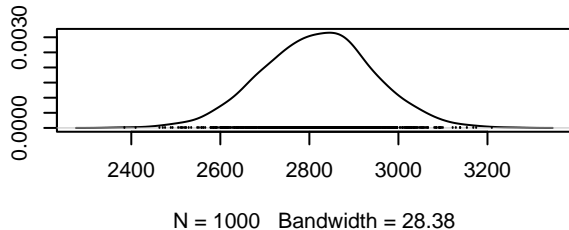
Density of B[AMO (C9), Raja\_brachyura (S4)]



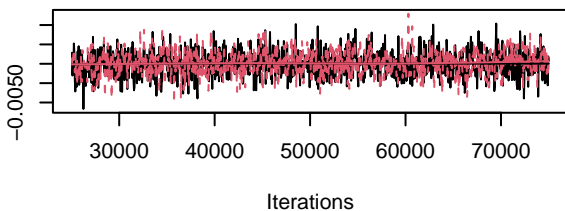
**Trace of B[(Intercept) (C1), Raja\_clavata (S5)]**



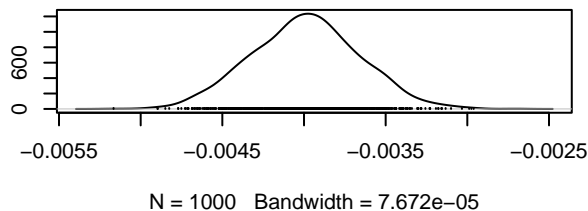
**Density of B[(Intercept) (C1), Raja\_clavata (S5)]**



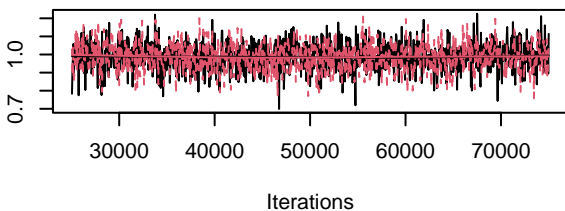
**Trace of B[depth (C2), Raja\_clavata (S5)]**



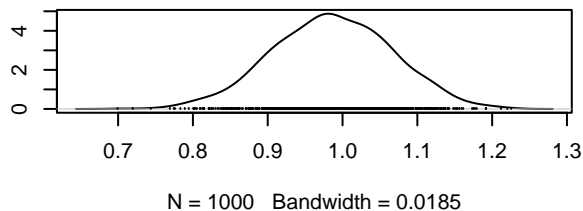
**Density of B[depth (C2), Raja\_clavata (S5)]**



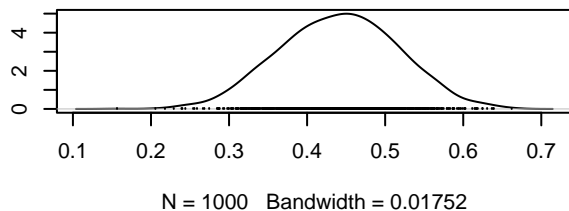
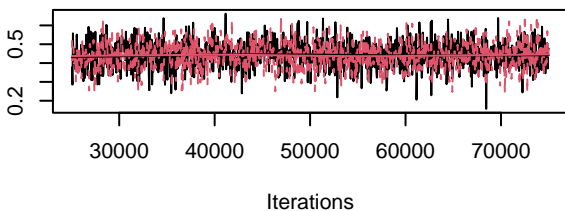
**Trace of B[slope (C3), Raja\_clavata (S5)]**



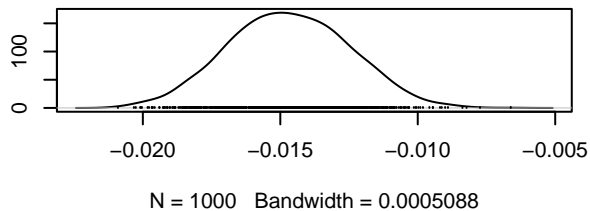
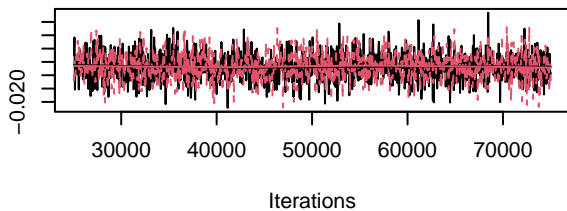
**Density of B[slope (C3), Raja\_clavata (S5)]**



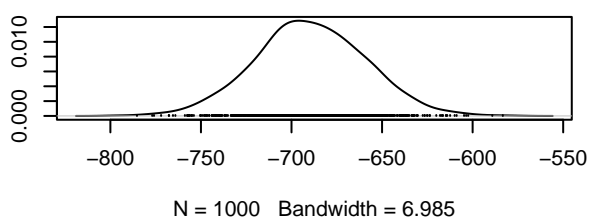
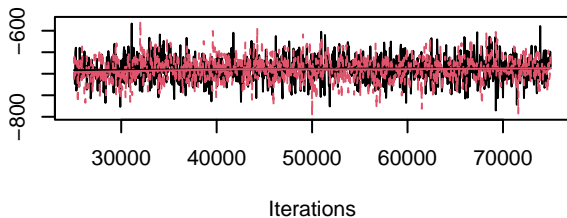
**poly(max\_SST\_summer, degree = 2, raw = T)1 (C4), Raja\_clavata (S5)**



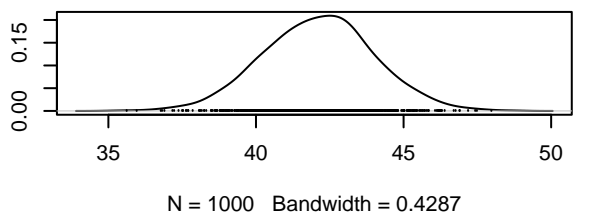
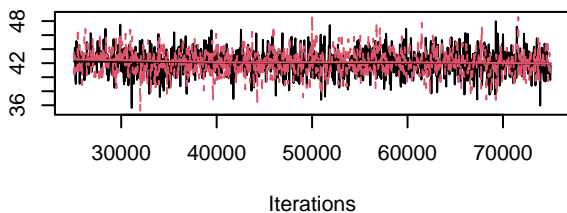
poly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Rajapoly(max\_SST\_summer, degree = 2, raw = T)2 (C5), R



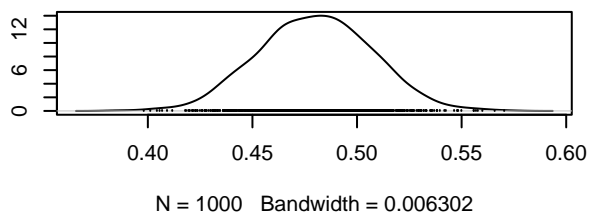
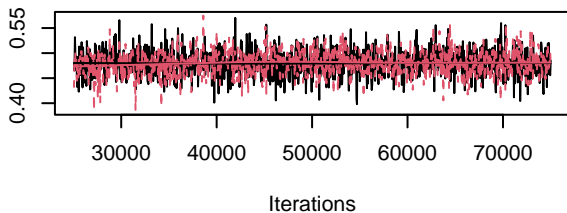
poly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Rajapoly(max\_ph\_summer, degree = 2, raw = T)1 (C6), R



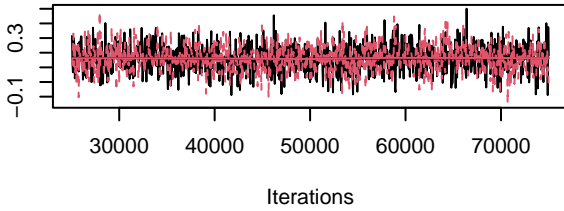
poly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Rajapoly(max\_ph\_summer, degree = 2, raw = T)2 (C7), R



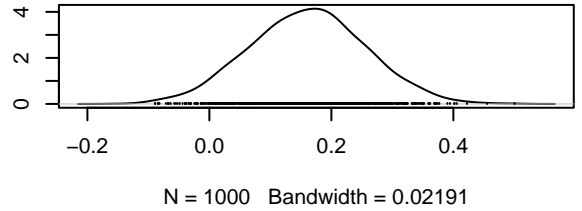
Trace of B[substrate\_diversity (C8), Raja\_clavata (S) Density of B[substrate\_diversity (C8), Raja\_clavata (S)



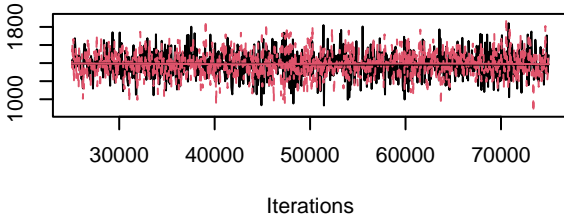
**Trace of B[AMO (C9), Raja\_clavata (S5)]**



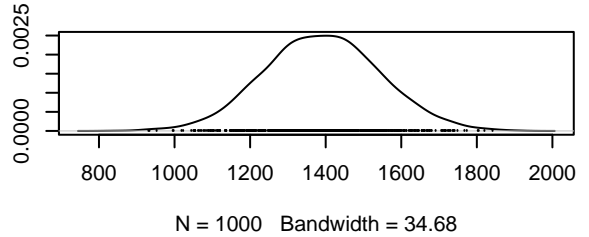
**Density of B[AMO (C9), Raja\_clavata (S5)]**



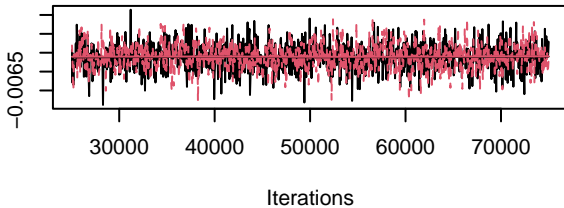
**Trace of B[(Intercept) (C1), Raja\_montagui (S6)]**



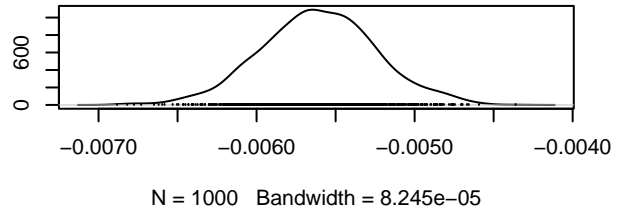
**Density of B[(Intercept) (C1), Raja\_montagui (S6)]**



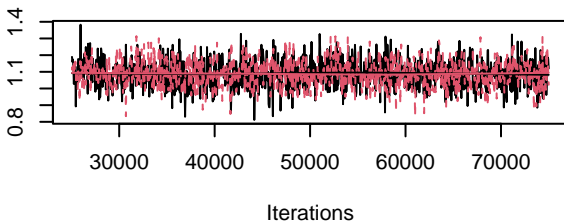
**Trace of B[depth (C2), Raja\_montagui (S6)]**



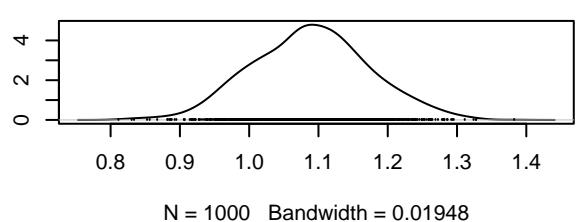
**Density of B[depth (C2), Raja\_montagui (S6)]**



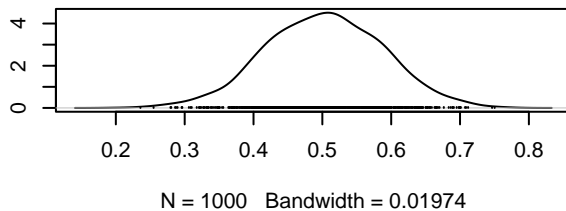
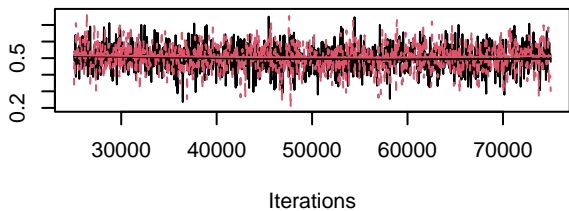
**Trace of B[slope (C3), Raja\_montagui (S6)]**



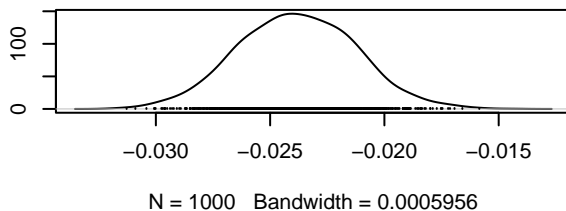
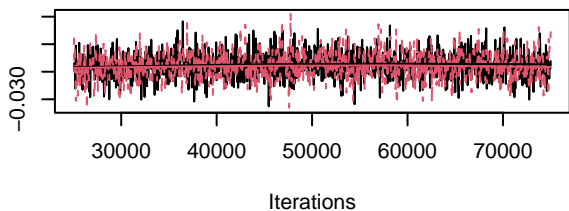
**Density of B[slope (C3), Raja\_montagui (S6)]**



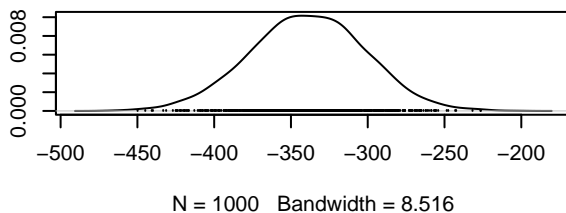
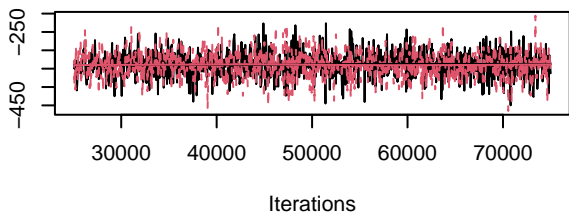
poly(max\_SST\_summer, degree = 2, raw = T)1 (C4), Rajpoly(max\_SST\_summer, degree = 2, raw = T)1 (C4), Raj



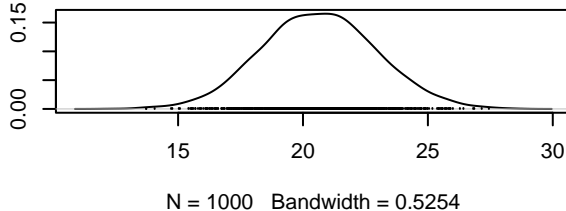
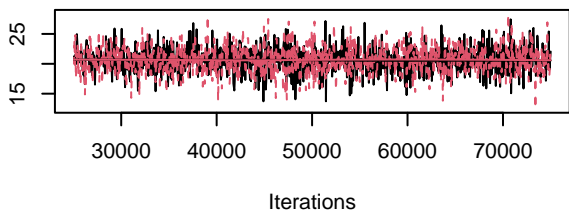
poly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Rajpoly(max\_SST\_summer, degree = 2, raw = T)2 (C5), Raj



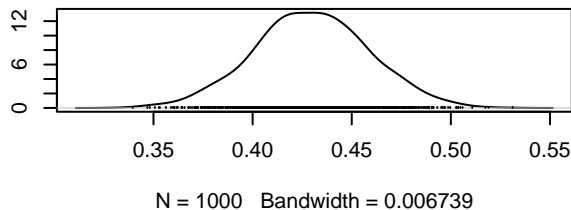
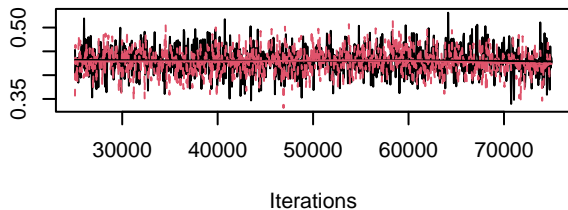
poly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Rajapoly(max\_ph\_summer, degree = 2, raw = T)1 (C6), Raj



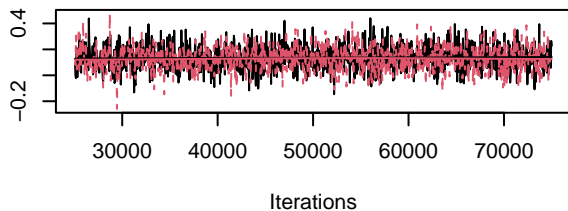
poly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Rajapoly(max\_ph\_summer, degree = 2, raw = T)2 (C7), Raj



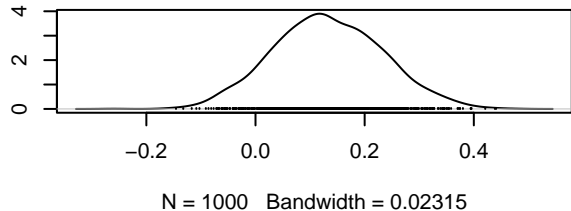
Trace of B[substrate\_diversity (C8), Raja\_montagui (Density of B[substrate\_diversity (C8), Raja\_montagui



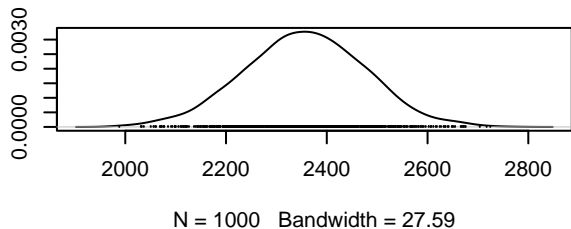
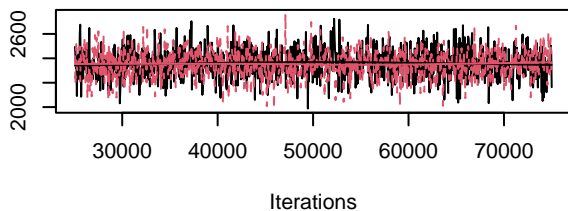
Trace of B[AMO (C9), Raja\_montagui (S6)]



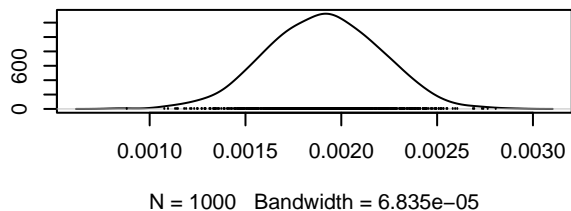
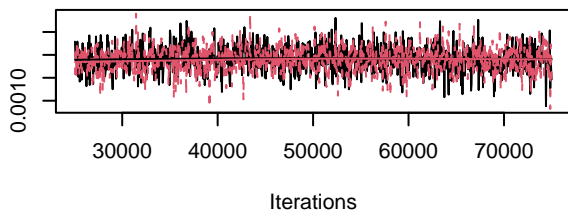
Density of B[AMO (C9), Raja\_montagui (S6)]



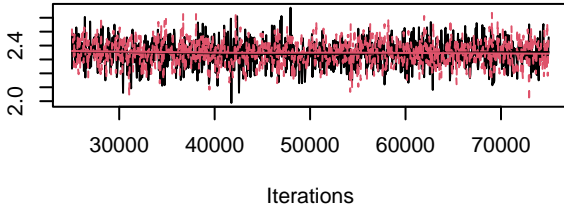
Trace of B[(Intercept) (C1), Scyliorhinus\_canicula (SDensity of B[(Intercept) (C1), Scyliorhinus\_canicula (S



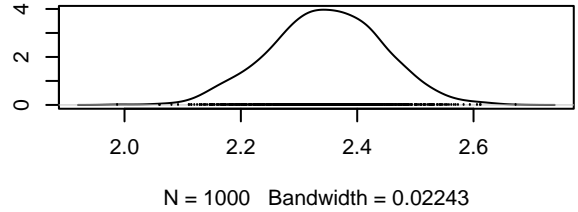
Trace of B[depth (C2), Scyliorhinus\_canicula (S7)] Density of B[depth (C2), Scyliorhinus\_canicula (S7



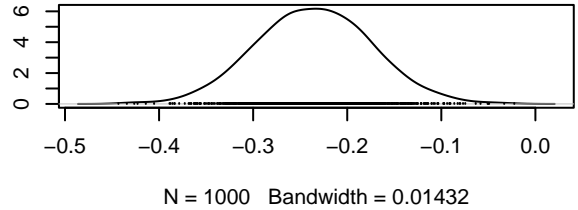
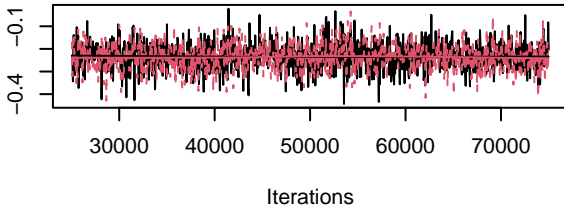
Trace of B[slope (C3), Scyliorhinus\_canicula (S7)]



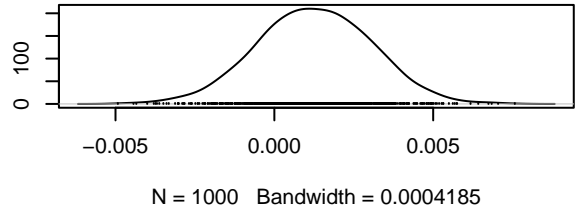
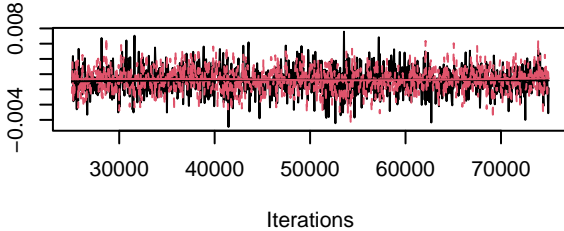
Density of B[slope (C3), Scyliorhinus\_canicula (S7)]



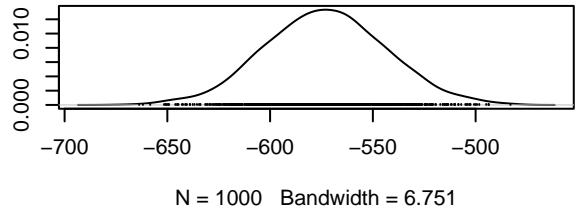
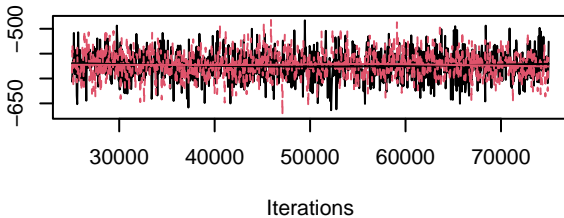
max\_SST\_summer, degree = 2, raw = T)1 (C4), Scyliorhinus\_canicula (S7)



max\_SST\_summer, degree = 2, raw = T)2 (C5), Scyliorhinus\_canicula (S7)

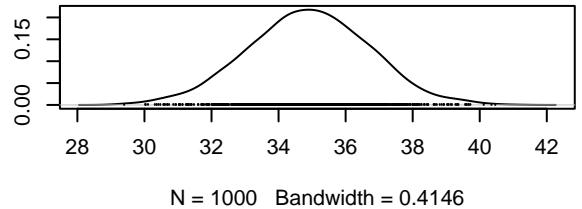
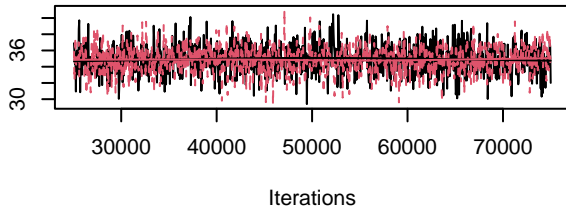


max\_ph\_summer, degree = 2, raw = T)1 (C6), Scyliorhinus\_canicula (S7)

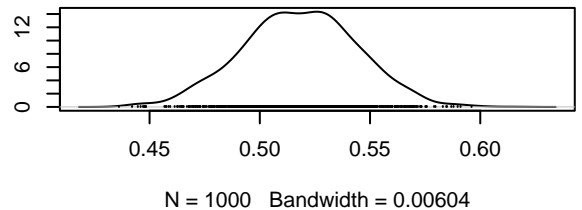
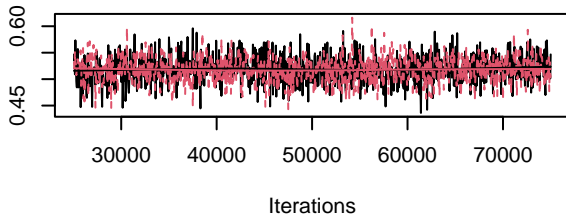




max\_ph\_summer, degree = 2, raw = T)2 (C7), Scyliorh/(max\_ph\_summer, degree = 2, raw = T)2 (C7), Scylior

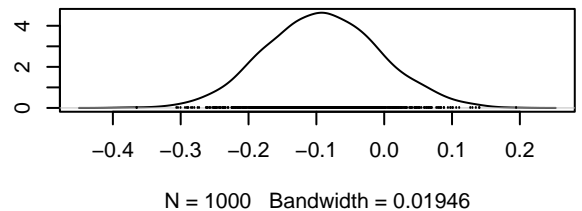
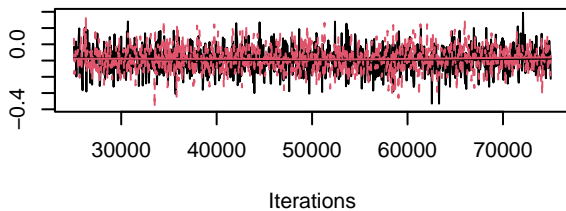


ce of B[substrate\_diversity (C8), Scyliorhinus\_canicusity of B[substrate\_diversity (C8), Scyliorhinus\_canic

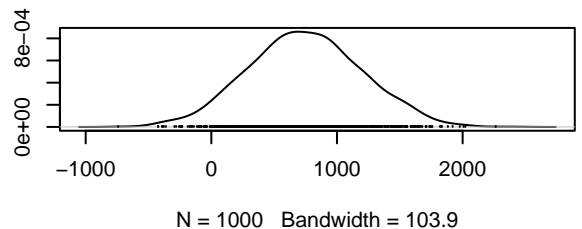
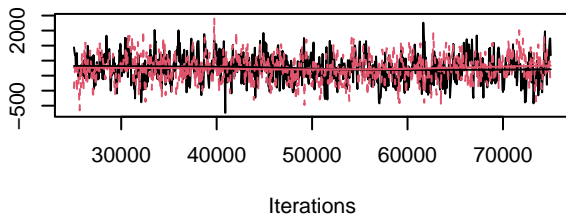


Trace of B[AMO (C9), Scyliorhinus\_canicula (S7)]

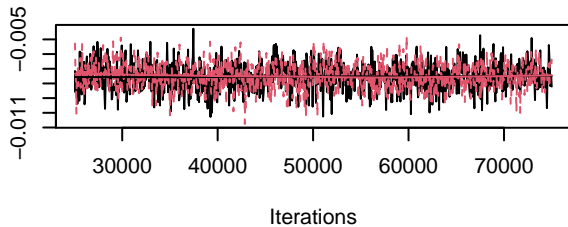
Density of B[AMO (C9), Scyliorhinus\_canicula (S7)]



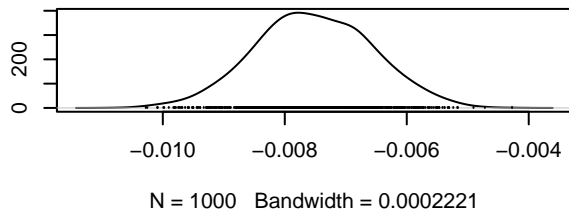
Trace of B[(Intercept) (C1), Scyliorhinus\_stellaris (S Density of B[(Intercept) (C1), Scyliorhinus\_stellaris (S



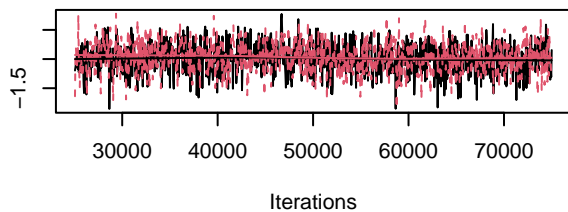
Trace of B[depth (C2), Scyliorhinus\_stellaris (S8)]



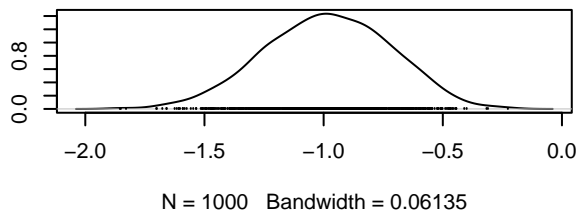
Density of B[depth (C2), Scyliorhinus\_stellaris (S8)]



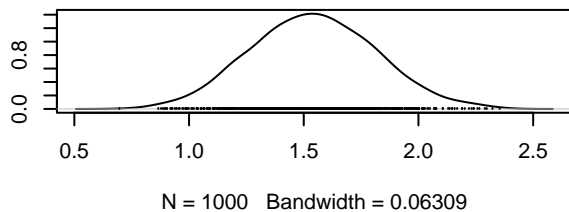
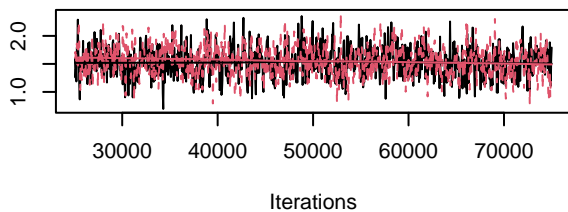
Trace of B[slope (C3), Scyliorhinus\_stellaris (S8)]



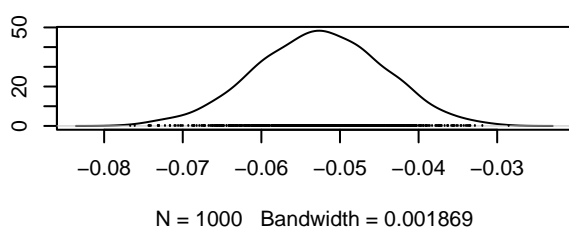
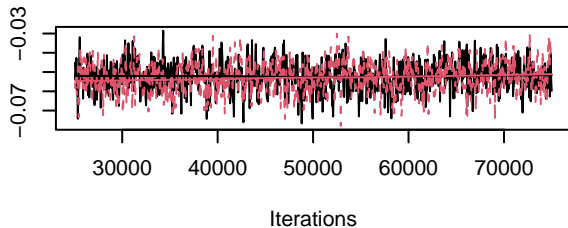
Density of B[slope (C3), Scyliorhinus\_stellaris (S8)]



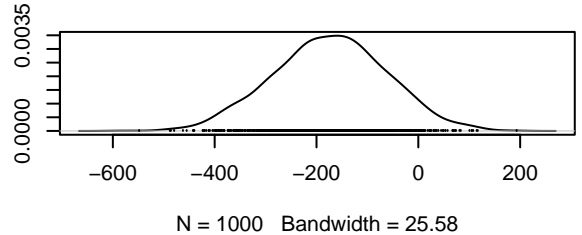
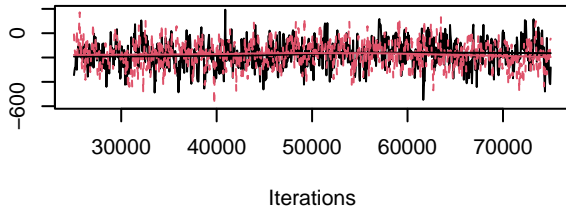
max\_SST\_summer, degree = 2, raw = T)1 (C4), Scyliorhinus\_stellaris (S8)



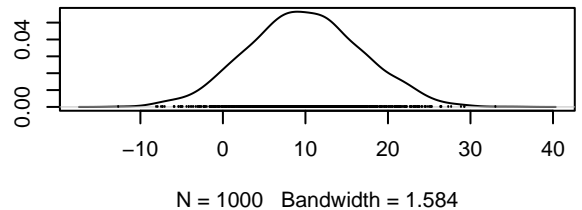
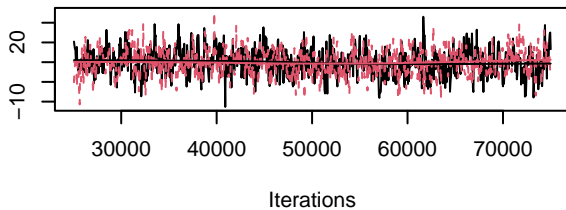
max\_SST\_summer, degree = 2, raw = T)2 (C5), Scyliorhinus\_stellaris (S8)



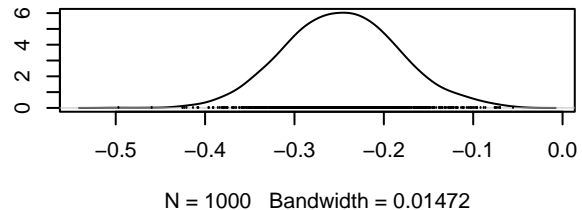
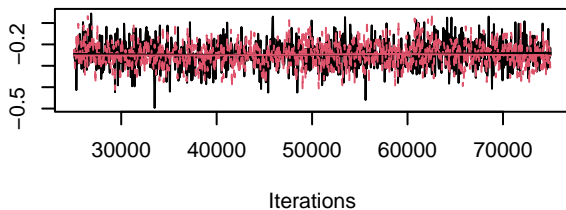
(max\_ph\_summer, degree = 2, raw = T)1 (C6), Scyliorhynchus stellatus (C6), Scyliorhynchus stellatus



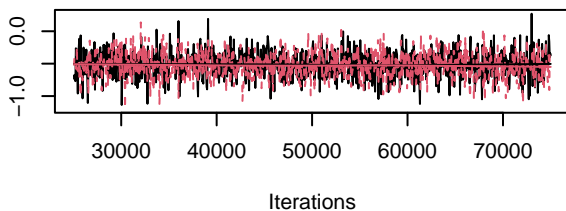
(max\_ph\_summer, degree = 2, raw = T)2 (C7), Scyliorhynchus stellatus (C7), Scyliorhynchus stellatus



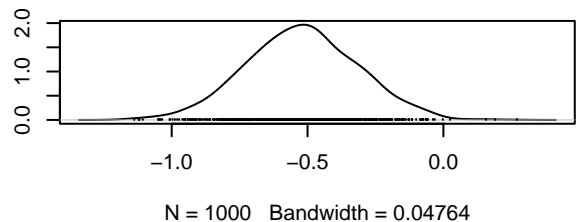
Scyliorhynchus stellatus (C8), Scyliorhynchus stellatus (C8), Scyliorhynchus stellatus



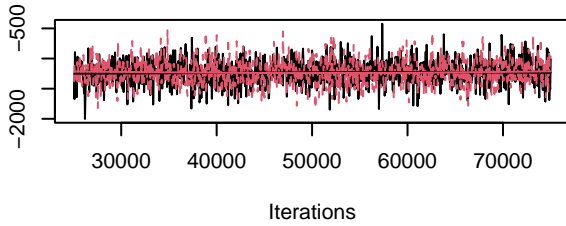
Trace of B[AMO (C9), Scyliorhynchus stellatus (S8)]



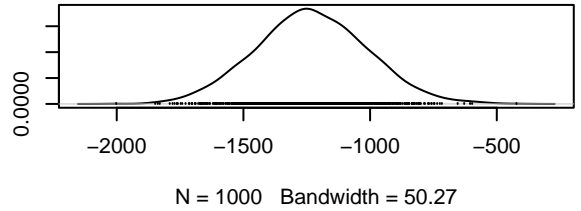
Density of B[AMO (C9), Scyliorhynchus stellatus (S8)]



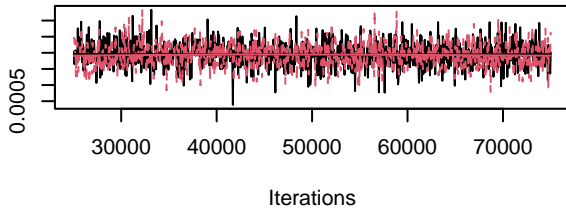
Trace of B[(Intercept) (C1), Squalus\_acanthias (S9)]



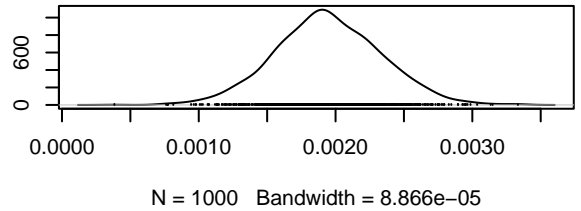
Density of B[(Intercept) (C1), Squalus\_acanthias (S9)]



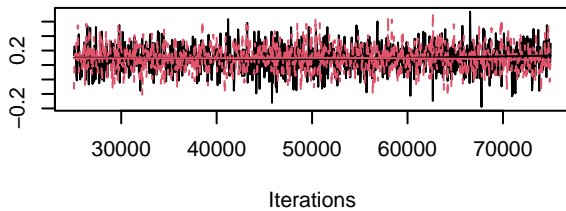
Trace of B[depth (C2), Squalus\_acanthias (S9)]



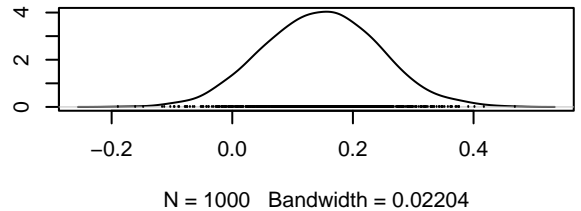
Density of B[depth (C2), Squalus\_acanthias (S9)]



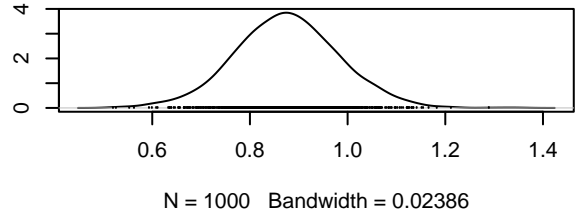
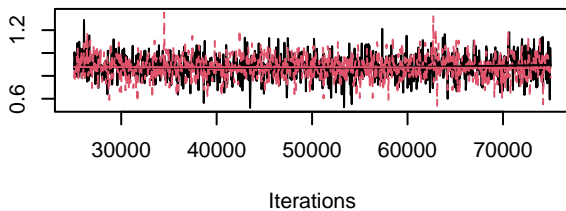
Trace of B[slope (C3), Squalus\_acanthias (S9)]



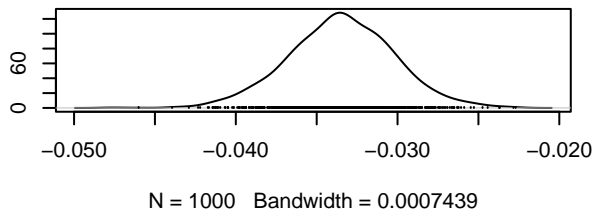
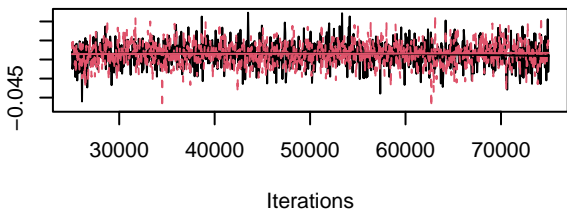
Density of B[slope (C3), Squalus\_acanthias (S9)]



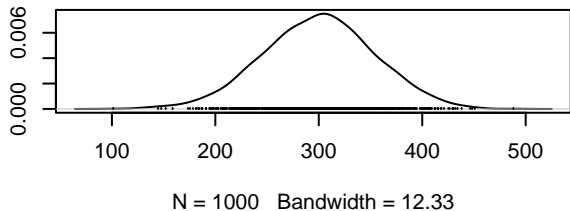
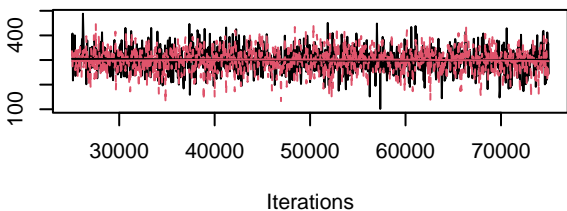
(max\_SST\_summer, degree = 2, raw = T)1 (C4), Squaly(max\_SST\_summer, degree = 2, raw = T)1 (C4), Squ



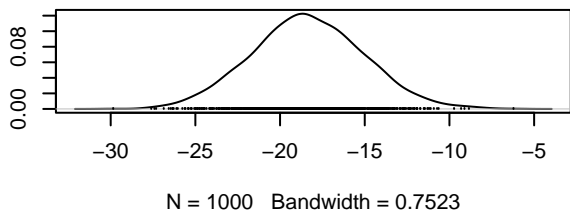
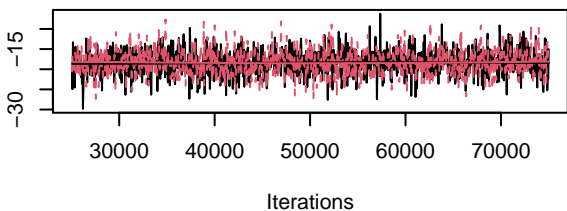
(max\_SST\_summer, degree = 2, raw = T)2 (C5), Squally(max\_SST\_summer, degree = 2, raw = T)2 (C5), Squa



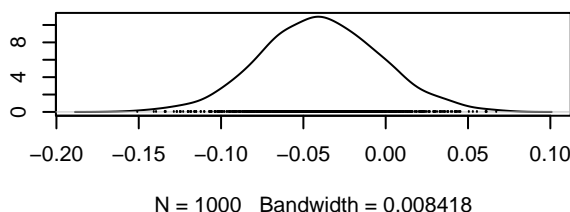
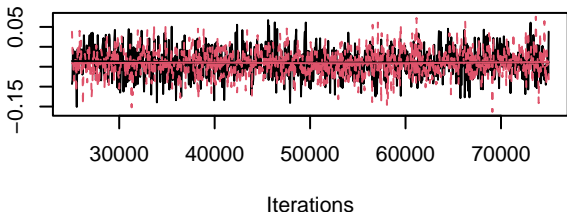
y(max\_ph\_summer, degree = 2, raw = T)1 (C6), Squally(max\_ph\_summer, degree = 2, raw = T)1 (C6), Squa



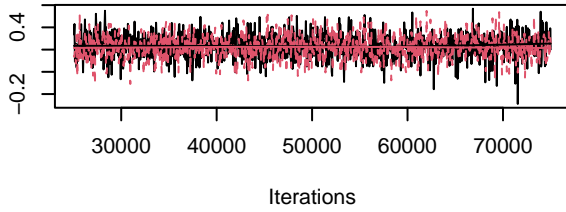
y(max\_ph\_summer, degree = 2, raw = T)2 (C7), Squally(max\_ph\_summer, degree = 2, raw = T)2 (C7), Squa



race of B[substrate\_diversity (C8), Squalus\_acanthiasnsity of B[substrate\_diversity (C8), Squalus\_acanthia



**Trace of B[AMO (C9), Squalus\_acanthias (S9)]**



**Density of B[AMO (C9), Squalus\_acanthias (S9)]**

