| Model | df | logLik | AICc | Delta AIC | Weight | R2 |
| --- | --- | --- | --- | --- | --- | --- |
| Biomass (g AFDM/m2) | | | | | | |
| s(Temperature) + Nf | 10 | -562.3 | 1146.1 | 0.00 | 0.54 | 0.64 |
| s(Temperature) + Nf x Date | 11 | -560.3 | 1146.5 | 0.36 | 0.45 | 0.61 |
| s(Temperature, Date) + Nf x Date | 10 | -565.9 | 1155.3 | 9.21 | 0.01 | 0.59 |
| s(Temperature, Date) + Nf | 9 | -567.9 | 1155.5 | 9.41 | 0.00 | 0.60 |
| s(Temperature) + Pf x Date | 11 | -628.7 | 1282.1 | 135.95 | 0.00 | 0.34 |
| s(Temperature) + Pf | 9 | -631.1 | 1282.3 | 136.16 | 0.00 | 0.39 |
| s(Temperature, Date) + Pf | 9 | -637.2 | 1293.9 | 147.81 | 0.00 | 0.39 |
| s(Temperature) + NPf | 9 | -638.1 | 1295.5 | 149.39 | 0.00 | 0.42 |
| s(Temperature, Date) + Pf x Date | 10 | -636.0 | 1295.6 | 149.44 | 0.00 | 0.38 |
| s(Temperature, Date) + NPf | 9 | -638.7 | 1296.9 | 150.76 | 0.00 | 0.41 |
| s(Temperature) + NPf x Date | 11 | -637.1 | 1298.0 | 151.85 | 0.00 | 0.42 |
| s(Temperature, Date) + NPf x Date | 10 | -637.7 | 1299.0 | 152.91 | 0.00 | 0.40 |
| s(Temperature) | 8 | -644.4 | 1306.0 | 159.92 | 0.00 | 0.34 |
| s(Temperature, Nf) | 9 | -643.1 | 1306.1 | 160.00 | 0.00 | 0.33 |
| Nf | 4 | -658.0 | 1324.2 | 178.09 | 0.00 | 0.27 |
| s(Temperature, Date) | 5 | -665.7 | 1341.8 | 195.63 | 0.00 | 0.26 |
| s(Temperature, NPf) | 5 | -666.0 | 1342.4 | 196.29 | 0.00 | 0.24 |
| s(Temperature, Pf) | 5 | -666.1 | 1342.5 | 196.38 | 0.00 | 0.25 |
| s(Temperature, Nf x Date) | 7 | -664.6 | 1343.9 | 197.75 | 0.00 | -0.16 |
| s(Temperature, NPf x Date) | 7 | -665.5 | 1345.6 | 199.44 | 0.00 | 0.23 |
| ts(Temperature, Pf x Date) | 7 | -665.6 | 1345.8 | 199.67 | 0.00 | 0.25 |
| NP | 4 | -688.9 | 1386.1 | 239.93 | 0.00 | 0.07 |
| Np | 4 | -689.3 | 1386.8 | 240.65 | 0.00 | 0.06 |
| Intercept-only | 3 | -693.8 | 1393.8 | 247.66 | 0.00 | 0.00 |
| ER (µM C/g AFDM/h) | | | | | | |
| s(Temperature) + Nf x Date | 7 | -534.0 | 1084.1 | 0.00 | 0.53 | 0.34 |
| s(Temperature, Date) + Nf x Date | 8 | -533.3 | 1085.4 | 1.35 | 0.27 | 0.33 |
| s(Temperature) + Nf | 5 | -536.7 | 1087.1 | 2.97 | 0.12 | 0.36 |
| s(Temperature, Date) + Nf | 6 | -535.9 | 1087.9 | 3.76 | 0.08 | 0.32 |
| Nf | 4 | -548.9 | 1108.9 | 24.76 | 0.00 | 0.22 |
| s(Temperature, NPf) | 5 | -551.3 | 1116.2 | 32.07 | 0.00 | 0.15 |
| s(Temperature) + NPf | 5 | -551.7 | 1117.0 | 32.86 | 0.00 | 0.08 |
| s(Temperature) + NPf x Date | 7 | -550.7 | 1117.6 | 33.50 | 0.00 | -0.13 |
| s(Temperature, Pf) | 5 | -552.1 | 1117.7 | 33.59 | 0.00 | 0.37 |
| s(Temperature, Date) + NPf | 6 | -551.5 | 1119.2 | 35.11 | 0.00 | 0.08 |
| s(Temperature, NPf x Date) | 7 | -550.2 | 1119.3 | 35.16 | 0.00 | 0.06 |
| ts(Temperature, Pf x Date) | 7 | -550.3 | 1119.4 | 35.31 | 0.00 | 0.36 |
| s(Temperature, Date) + NPf x Date | 8 | -550.7 | 1120.2 | 36.15 | 0.00 | -0.12 |
| s(Temperature) | 4 | -555.9 | 1123.0 | 38.89 | 0.00 | 0.19 |
| s(Temperature) + Pf | 5 | -555.0 | 1123.5 | 39.40 | 0.00 | 0.25 |
| s(Temperature, Date) | 5 | -555.4 | 1124.4 | 40.34 | 0.00 | 0.17 |
| s(Temperature, Date) + Pf | 6 | -554.2 | 1124.5 | 40.43 | 0.00 | 0.21 |
| s(Temperature, Nf) | 5 | -555.8 | 1125.2 | 41.10 | 0.00 | 0.09 |
| s(Temperature) + Pf x Date | 7 | -554.8 | 1125.7 | 41.64 | 0.00 | 0.22 |
| s(Temperature, Date) + Pf x Date | 8 | -554.1 | 1127.0 | 42.95 | 0.00 | 0.20 |
| s(Temperature, Nf x Date) | 7 | -555.3 | 1129.5 | 45.37 | 0.00 | 0.12 |
| Np | 4 | -560.1 | 1131.2 | 47.13 | 0.00 | 0.14 |
| Intercept-only | 3 | -562.6 | 1134.0 | 49.87 | 0.00 | 0.10 |
| NP | 4 | -561.7 | 1134.6 | 50.48 | 0.00 | 0.11 |
| GPP (µM C/g AFDM/h) | | | | | | |
| s(Temperature) + Nf x Date | 7 | -589.4 | 1195.0 | 0.00 | 0.46 | 0.54 |
| s(Temperature) + Nf | 5 | -591.5 | 1196.5 | 1.51 | 0.22 | 0.56 |
| s(Temperature, Date) + Nf x Date | 8 | -589.0 | 1196.8 | 1.79 | 0.19 | 0.56 |
| s(Temperature, Date) + Nf | 6 | -590.7 | 1197.6 | 2.52 | 0.13 | 0.54 |
| Nf | 4 | -607.7 | 1226.5 | 31.51 | 0.00 | 0.40 |
| s(Temperature) + NPf | 5 | -610.4 | 1234.3 | 39.30 | 0.00 | 0.31 |
| s(Temperature) + NPf x Date | 7 | -609.8 | 1235.7 | 40.67 | 0.00 | 0.23 |
| s(Temperature, Date) + NPf | 6 | -610.4 | 1236.9 | 41.81 | 0.00 | 0.31 |
| s(Temperature, Date) + NPf x Date | 8 | -609.8 | 1238.4 | 43.33 | 0.00 | 0.22 |
| s(Temperature, NPf) | 5 | -613.6 | 1240.7 | 45.67 | 0.00 | 0.19 |
| s(Temperature) | 4 | -615.1 | 1241.2 | 46.20 | 0.00 | 0.30 |
| s(Temperature) + Pf | 5 | -613.9 | 1241.5 | 46.42 | 0.00 | 0.36 |
| s(Temperature, Nf) | 5 | -614.5 | 1242.5 | 47.43 | 0.00 | -0.07 |
| s(Temperature, Pf) | 5 | -614.5 | 1242.5 | 47.49 | 0.00 | 0.35 |
| s(Temperature, Date) | 5 | -614.9 | 1243.4 | 48.40 | 0.00 | 0.28 |
| s(Temperature, Date) + Pf | 6 | -613.7 | 1243.5 | 48.45 | 0.00 | 0.34 |
| s(Temperature) + Pf x Date | 7 | -613.8 | 1243.7 | 48.68 | 0.00 | 0.34 |
| s(Temperature, NPf x Date) | 7 | -613.2 | 1245.1 | 50.09 | 0.00 | 0.11 |
| ts(Temperature, Pf x Date) | 7 | -613.4 | 1245.5 | 50.49 | 0.00 | 0.34 |
| s(Temperature, Date) + Pf x Date | 8 | -613.5 | 1245.9 | 50.86 | 0.00 | 0.33 |
| s(Temperature, Nf x Date) | 7 | -614.1 | 1247.0 | 51.91 | 0.00 | 0.12 |
| NP | 4 | -619.8 | 1250.7 | 55.67 | 0.00 | 0.23 |
| Np | 4 | -620.6 | 1252.3 | 57.25 | 0.00 | 0.19 |
| Intercept-only | 3 | -622.1 | 1252.8 | 57.78 | 0.00 | 0.16 |
| NEP (µM C/g AFDM/h) | | | | | | |
| s(Temperature) + Nf x Date | 10 | -550.3 | 1127.8 | 0.00 | 0.53 | 0.72 |
| s(Temperature) + Nf | 9 | -552.1 | 1128.1 | 0.26 | 0.47 | 0.71 |
| s(Temperature, Date) + Nf | 6 | -565.3 | 1146.8 | 18.94 | 0.00 | 0.48 |
| s(Temperature, Date) + Nf x Date | 8 | -564.3 | 1147.5 | 19.65 | 0.00 | 0.49 |
| Nf | 4 | -580.0 | 1171.0 | 43.16 | 0.00 | 0.41 |
| s(Temperature) + NPf | 5 | -582.0 | 1177.5 | 49.73 | 0.00 | 0.40 |
| s(Temperature) + NPf x Date | 7 | -581.5 | 1179.2 | 51.39 | 0.00 | 0.39 |
| s(Temperature, Date) + NPf | 6 | -582.0 | 1180.1 | 52.25 | 0.00 | 0.39 |
| s(Temperature, Date) + NPf x Date | 8 | -581.5 | 1181.9 | 54.03 | 0.00 | 0.39 |
| s(Temperature) | 4 | -586.9 | 1184.9 | 57.07 | 0.00 | 0.26 |
| s(Temperature) + Pf | 5 | -585.9 | 1185.3 | 57.46 | 0.00 | 0.26 |
| s(Temperature, Nf) | 5 | -586.1 | 1185.8 | 57.95 | 0.00 | -0.28 |
| s(Temperature, NPf) | 5 | -586.8 | 1187.2 | 59.33 | 0.00 | 0.19 |
| s(Temperature, Date) | 5 | -586.9 | 1187.3 | 59.48 | 0.00 | 0.24 |
| s(Temperature, Pf) | 5 | -586.9 | 1187.3 | 59.50 | 0.00 | 0.24 |
| s(Temperature) + Pf x Date | 7 | -585.7 | 1187.5 | 59.69 | 0.00 | 0.24 |
| s(Temperature, Date) + Pf | 6 | -585.8 | 1187.7 | 59.91 | 0.00 | 0.25 |
| s(Temperature, Nf x Date) | 7 | -585.6 | 1190.0 | 62.15 | 0.00 | -0.11 |
| s(Temperature, Date) + Pf x Date | 8 | -585.6 | 1190.1 | 62.23 | 0.00 | 0.23 |
| NP | 4 | -589.9 | 1190.9 | 63.07 | 0.00 | 0.27 |
| ts(Temperature, Pf x Date) | 7 | -586.6 | 1191.9 | 64.08 | 0.00 | 0.21 |
| s(Temperature, NPf x Date) | 7 | -586.8 | 1192.3 | 64.51 | 0.00 | 0.16 |
| Intercept-only | 3 | -593.4 | 1195.4 | 67.60 | 0.00 | 0.14 |
| Np | 4 | -592.7 | 1196.4 | 68.62 | 0.00 | 0.15 |
| N fixation (µM N/g AFDM/h) | | | | | | |
| s(Temperature) + Nf | 5 | -180.7 | 374.4 | 0.00 | 0.36 | 0.45 |
| s(Temperature, Nf) | 5 | -181.4 | 375.5 | 1.08 | 0.21 | 0.47 |
| s(Temperature) + Nf x Date | 7 | -179.9 | 376.0 | 1.64 | 0.16 | 0.49 |
| s(Temperature, Date) + Nf | 6 | -180.7 | 376.9 | 2.54 | 0.10 | 0.43 |
| s(Temperature, Date) + Nf x Date | 8 | -179.9 | 378.6 | 4.26 | 0.04 | 0.47 |
| s(Temperature, Nf x Date) | 7 | -180.7 | 379.3 | 4.97 | 0.03 | 0.52 |
| s(Temperature, NPf) | 5 | -183.2 | 379.4 | 5.00 | 0.03 | 0.33 |
| s(Temperature) + NPf | 5 | -183.6 | 380.3 | 5.88 | 0.02 | 0.32 |
| s(Temperature) | 4 | -185.6 | 381.7 | 7.33 | 0.01 | 0.27 |
| s(Temperature) + NPf x Date | 7 | -183.1 | 382.3 | 7.93 | 0.01 | 0.31 |
| s(Temperature) + Pf | 5 | -184.8 | 382.4 | 8.07 | 0.01 | 0.30 |
| s(Temperature, Date) + NPf | 6 | -183.5 | 382.8 | 8.38 | 0.01 | 0.31 |
| s(Temperature, Pf) | 5 | -185.2 | 383.2 | 8.79 | 0.00 | 0.30 |
| s(Temperature) + Pf x Date | 7 | -183.7 | 383.5 | 9.10 | 0.00 | 0.33 |
| s(Temperature, Date) | 5 | -185.6 | 384.1 | 9.73 | 0.00 | 0.27 |
| s(Temperature, NPf x Date) | 7 | -183.1 | 384.4 | 10.01 | 0.00 | 0.32 |
| s(Temperature, Date) + NPf x Date | 8 | -183.0 | 384.9 | 10.50 | 0.00 | 0.30 |
| s(Temperature, Date) + Pf | 6 | -184.8 | 385.0 | 10.59 | 0.00 | 0.29 |
| s(Temperature, Date) + Pf x Date | 8 | -183.7 | 386.1 | 11.77 | 0.00 | 0.32 |
| ts(Temperature, Pf x Date) | 7 | -184.4 | 386.9 | 12.51 | 0.00 | 0.32 |
| Nf | 4 | -194.4 | 398.8 | 24.45 | 0.00 | 0.13 |
| NP | 4 | -197.6 | 405.9 | 31.53 | 0.00 | 0.04 |
| Intercept-only | 3 | -201.0 | 410.1 | 35.72 | 0.00 | 0.02 |
| Np | 4 | -200.0 | 410.1 | 35.75 | 0.00 | 0.02 |
| NH4 uptake (µM N/g AFDM/h) | | | | | | |
| s(Temperature) + NPf | 8 | -434.4 | 890.1 | 0.00 | 0.61 | 0.48 |
| s(Temperature) + Nf | 5 | -440.7 | 892.6 | 2.46 | 0.18 | 0.33 |
| s(Temperature) + NPf x Date | 10 | -433.3 | 893.7 | 3.62 | 0.10 | 0.47 |
| s(Temperature, Date) + Nf | 6 | -440.7 | 895.1 | 4.93 | 0.05 | 0.32 |
| s(Temperature) + Nf x Date | 7 | -439.9 | 896.0 | 5.91 | 0.03 | 0.31 |
| s(Temperature, Nf) | 8 | -438.0 | 897.3 | 7.17 | 0.02 | 0.46 |
| s(Temperature, Date) + Nf x Date | 8 | -439.9 | 898.7 | 8.57 | 0.01 | 0.30 |
| s(Temperature, Date) + NPf | 6 | -447.7 | 909.1 | 18.95 | 0.00 | 0.27 |
| Nf | 4 | -450.3 | 909.4 | 19.26 | 0.00 | 0.20 |
| s(Temperature, Date) + NPf x Date | 8 | -447.3 | 913.4 | 23.24 | 0.00 | 0.26 |
| s(Temperature) | 4 | -452.6 | 913.9 | 23.77 | 0.00 | 0.14 |
| s(Temperature) + Pf | 5 | -452.2 | 915.6 | 25.47 | 0.00 | 0.13 |
| s(Temperature, NPf) | 5 | -452.5 | 916.2 | 26.09 | 0.00 | 0.11 |
| s(Temperature, Pf) | 5 | -452.6 | 916.3 | 26.14 | 0.00 | 0.13 |
| s(Temperature, Date) | 5 | -452.6 | 916.3 | 26.14 | 0.00 | 0.13 |
| s(Temperature, Date) + Pf | 6 | -452.2 | 918.1 | 27.94 | 0.00 | 0.12 |
| NP | 4 | -455.1 | 918.9 | 28.82 | 0.00 | 0.13 |
| s(Temperature) + Pf x Date | 7 | -451.5 | 919.1 | 28.94 | 0.00 | 0.11 |
| ts(Temperature, Pf x Date) | 7 | -452.3 | 920.8 | 30.72 | 0.00 | 0.10 |
| s(Temperature, NPf x Date) | 7 | -452.4 | 920.9 | 30.83 | 0.00 | 0.07 |
| s(Temperature, Nf x Date) | 7 | -452.4 | 921.1 | 30.93 | 0.00 | 0.05 |
| s(Temperature, Date) + Pf x Date | 8 | -451.5 | 921.7 | 31.61 | 0.00 | 0.09 |
| Intercept-only | 3 | -458.7 | 923.9 | 33.76 | 0.00 | 0.00 |
| Np | 4 | -458.5 | 925.7 | 35.61 | 0.00 | -0.01 |
| Tot. N Assim (µM N/g AFDM/h) | | | | | | |
| s(Temperature) + Nf | 5 | -441.1 | 893.3 | 0.00 | 0.40 | 0.32 |
| s(Temperature) + NPf x Date | 10 | -433.3 | 893.7 | 0.39 | 0.33 | 0.47 |
| s(Temperature, Date) + Nf | 6 | -441.1 | 895.8 | 2.47 | 0.12 | 0.31 |
| s(Temperature, Nf) | 8 | -437.8 | 896.9 | 3.61 | 0.07 | 0.46 |
| s(Temperature) + Nf x Date | 7 | -440.4 | 897.0 | 3.66 | 0.06 | 0.31 |
| s(Temperature, Date) + Nf x Date | 8 | -440.4 | 899.6 | 6.32 | 0.02 | 0.29 |
| s(Temperature) + NPf | 5 | -447.8 | 906.8 | 13.45 | 0.00 | 0.28 |
| s(Temperature, Date) + NPf | 6 | -447.8 | 909.2 | 15.88 | 0.00 | 0.28 |
| Nf | 4 | -451.2 | 911.1 | 17.73 | 0.00 | 0.20 |
| s(Temperature, Date) + NPf x Date | 8 | -447.3 | 913.5 | 20.18 | 0.00 | 0.26 |
| s(Temperature) | 4 | -452.6 | 914.0 | 20.66 | 0.00 | 0.15 |
| s(Temperature) + Pf | 5 | -452.3 | 915.7 | 22.38 | 0.00 | 0.14 |
| s(Temperature, NPf) | 5 | -452.6 | 916.3 | 22.96 | 0.00 | 0.12 |
| s(Temperature, Pf) | 5 | -452.6 | 916.3 | 23.02 | 0.00 | 0.14 |
| s(Temperature, Date) | 5 | -452.6 | 916.4 | 23.03 | 0.00 | 0.14 |
| s(Temperature, Date) + Pf | 6 | -452.3 | 918.2 | 24.86 | 0.00 | 0.13 |
| s(Temperature) + Pf x Date | 7 | -451.6 | 919.3 | 25.93 | 0.00 | 0.11 |
| NP | 4 | -455.6 | 919.9 | 26.59 | 0.00 | 0.12 |
| ts(Temperature, Pf x Date) | 7 | -452.4 | 920.9 | 27.57 | 0.00 | 0.11 |
| s(Temperature, NPf x Date) | 7 | -452.4 | 921.0 | 27.72 | 0.00 | 0.08 |
| s(Temperature, Nf x Date) | 7 | -452.5 | 921.1 | 27.75 | 0.00 | 0.05 |
| s(Temperature, Date) + Pf x Date | 8 | -451.6 | 921.9 | 28.60 | 0.00 | 0.10 |
| Intercept-only | 3 | -459.1 | 924.7 | 31.33 | 0.00 | 0.00 |
| Np | 4 | -458.9 | 926.6 | 33.22 | 0.00 | -0.01 |