# Appendix 2 (online supplementary information): Bayesian chronological model, OxCal v.4.3

Options()

{

Resolution=10;

kIterations=100;

};

Plot()

{

Sequence("sedimentary complexes")

{

Boundary("Start I");

Date("Complex I date");

Boundary("End I");

Date("hiatus I-II");

Boundary("Start II");

Date("Complex II date");

Boundary("End II");

Date("hiatus II-III");

Boundary("Start III");

Date("Complex III date");

Boundary("End III");

Date("hiatus III-IV");

Boundary("Start IV");

Date("Complex IV date");

Boundary("End IV");

};

Outlier\_Model("Charcoal",Exp(1,-10,0),U(0,2),"t");

Phase("excavated areas")

{

Sequence("trench X")

{

Boundary("=Start I");

Phase("Complex X.I")

{

R\_Date("Bln-2761", 9560, 100)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End I");

Boundary("=Start II");

Phase("Complex X.II")

{

R\_Date("Bln-2760", 9420, 100)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End II");

Boundary("=Start III");

Phase("Complex X.III")

{

R\_Date("Bln-3015", 9140, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3016", 8970, 70)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End III");

};

Sequence("trench B")

{

Boundary("=Start I");

Phase("Complex B.I")

{

R\_Date("Bln-3036", 9680, 70)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End I");

Boundary("=Start II");

Phase("Complex B.II")

{

R\_Date("Bln-2758", 9250, 100)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End II");

Boundary("=Start III");

Phase("Complex B.III")

{

R\_Date("KN-5785", 9020, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5792", 8815, 55)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3035", 8850, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5790", 8600, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5787", 8690, 50)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End III");

Boundary("=Start IV");

Phase("Complex B.IV")

{

R\_Date("Bln-3029", 6990, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5789", 7235, 50)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5786", 7365, 40)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3030", 7290, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2757", 7750, 100)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2825", 7820, 80)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3031", 7570, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5784", 7790, 55)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3032", 8130, 60)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End IV");

Date("hiatus IV-Neolithic");

};

Sequence("trench AC")

{

Boundary("=Start I");

Phase("Complex AC.I")

{

R\_Date("Bln-2828", 9640, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2753", 9490, 100)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-1914", 9450, 65)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2756", 9630, 100)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End I");

Boundary("=Start II");

Phase("Complex AC.II")

{

R\_Date("Bln-2752", 9190, 100)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3358", 9400, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3359", 9340, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3603", 9350, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3356", 9220, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3706", 9470, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3705", 9420, 80)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3355", 9380, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3297", 9340, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2751", 9280, 100)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2750", 9190, 100)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End II");

Boundary("=Start III");

Phase("Complex AC.III")

{

R\_Date("Bln-3362", 8960, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-1912", 8720, 90)

{

Outlier("Charcoal", 0.1);

};

R\_Combine("Bln-1913 mean")

{

Outlier("Charcoal", 0.1);

R\_Date("Bln-1913a", 8850, 70);

R\_Date("Bln-1913", 8975, 70);

};

R\_Date("Bln-2755", 8630, 100)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2829", 8390, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2733", 8980, 100)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3296", 8820, 60)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End III");

Boundary("=Start IV");

Phase("Complex AC.IV")

{

R\_Date("Bln-3360", 7940, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3361", 7900, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2748", 7580, 100)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-2826", 7560, 80)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3295", 6730, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5850", 6600, 40)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End IV");

R\_Date("KN-5839", 5460, 40)

{

Outlier("Charcoal", 0.1);

};

};

Sequence("trench D")

{

Boundary("=Start IV");

Phase("Complex D.IV")

{

R\_Date("KN-5793", 8070, 55)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5794", 8150, 55)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5795", 7950, 45)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End IV");

};

Sequence("trench Z")

{

Boundary("=Start I");

Phase("Complex Z.I")

{

R\_Date("Bln-3026", 9670, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3001", 9580, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3020", 9640, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3019", 9640, 70)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End I");

Boundary("=Start II");

Phase("Complex Z.II")

{

R\_Date("Bln-3000", 9220, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3025", 9340, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3018", 9400, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3009", 9240, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3024", 9180, 70)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End II");

Boundary("=Start III");

Phase("Complex Z.III")

{

R\_Date("Bln-3022", 9150, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3027", 9040, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3008", 9040, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3023", 9040, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3017", 9010, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3014", 8980, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3013", 8980, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3012", 8960, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3021", 9010, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3006", 9000, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3007", 8980, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3028", 8940, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3003", 8940, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3011", 8840, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3010", 8810, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3354", 8700, 70)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End III");

Boundary("=Start IV");

Phase("Complex Z.IV")

{

R\_Date("Bln-2999", 8170, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3005", 7840, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3353", 7700, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Combine("Bln-3352 mean")

{

Outlier("Charcoal", 0.1);

R\_Date("Bln-3352A", 7690, 60);

R\_Date("Bln-3352", 7610, 60);

};

R\_Date("Bln-3004", 7740, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3704", 7850, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3703", 7800, 60)

{

Outlier("Charcoal", 0.1);

};

R\_Date("Bln-3351", 7380, 70)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5841", 7580, 50)

{

Outlier("Charcoal", 0.1);

};

R\_Date("KN-5842", 6880, 50)

{

Outlier("Charcoal", 0.1);

};

};

Boundary("=End IV");

};

};

Page( );

Phase("human remains, uncorrected")

{

R\_Date("AAR-15034 B129 stray find", 10277, 28);

R\_Date("AAR-16184 II D C2W 23", 9737, 60);

R\_Date("AAR-16183 M01 II Z C7S 17", 9294, 39);

R\_Date("KIA-51291 M03 II D D2 8b2", 9099, 55);

R\_Date("KIA-51300 M16 IV D E2 6", 8291, 45);

R\_Date("AAR-16181 M08 IV D C6 37a", 4917, 28);

R\_Date("KIA-51293 M06 IV A A5 4", 4666, 36);

R\_Date("KIA-51296 M10 IV B E2-4 5", 4646, 34);

R\_Date("KIA-51299 M15 D F7 1", 3427, 31);

};

Phase("human remains, diet-corrected, 3-source model")

{

Curve("terrestrial","IntCal13.14c");

Curve("fish","IntCal13.14c")

{

Reservoir(1210,30);

};

Mix\_Curves("AAR-15034", "terrestrial", "fish", 40,11);

R\_Date("\*AAR-15034 B129 stray find", 10277, 28);

Mix\_Curves("AAR-16184", "terrestrial", "fish", 35,12);

R\_Date("\*AAR-16184 II D C2W 23", 9737, 60);

Mix\_Curves("AAR-16183", "terrestrial", "fish", 25,12);

R\_Date("\*AAR-16183 M01 II Z C7S 17", 9294, 39);

Mix\_Curves("KIA-51291", "terrestrial", "fish", 6,5);

R\_Date("\*KIA-51291 M03 II D D2 8b2", 9099, 55);

Mix\_Curves("KIA-51300", "terrestrial", "fish", 5,4);

R\_Date("\*KIA-51300 M16 IV D E2 6", 8291, 45);

Mix\_Curves("AAR-16181", "terrestrial", "fish", 44,10);

R\_Date("\*AAR-16181 M08 IV D C6 37a", 4917, 28);

Mix\_Curves("KIA-51293", "terrestrial", "fish", 9,7);

R\_Date("\*KIA-51293 M06 IV A A5 4", 4666, 36);

Mix\_Curves("KIA-51296", "terrestrial", "fish", 14,9);

R\_Date("\*KIA-51296 M10 IV B E2-4 5", 4646, 34);

Mix\_Curves("KIA-51299", "terrestrial", "fish", 6,5);

R\_Date("\*KIA-51299 M15 D F7 1", 3427, 31);

};

Phase("Complex duration")

{

Difference("Complex I duration", "End I", "Start I");

Difference("Complex I-II hiatus", "Start II", "End I");

Difference("Complex II duration", "End II", "Start II");

Difference("Complex II-III hiatus", "Start III", "End II");

Difference("Complex III duration", "End III", "Start III");

Difference("Complex III-IV hiatus", "Start IV", "End III");

Difference("Complex IV duration", "End IV", "Start IV");

};

};