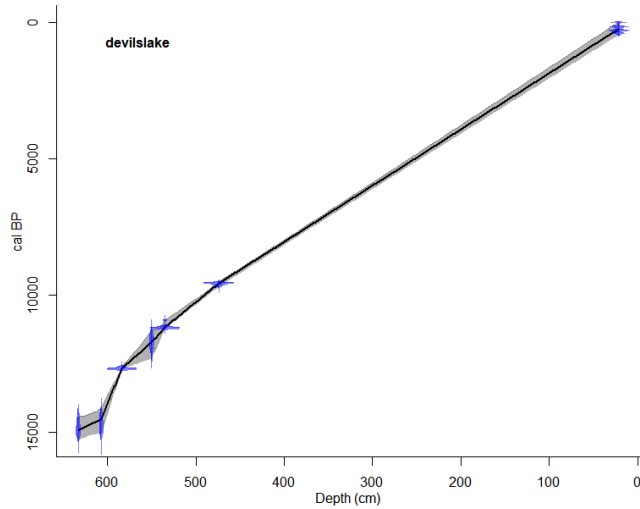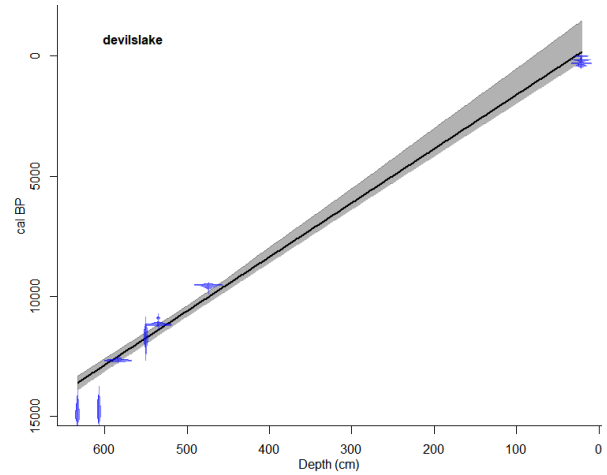Michael Peyton
GEOG 920

1). Median = 14897 cal BP, 95% CI = 14339 − 15249 cal BP
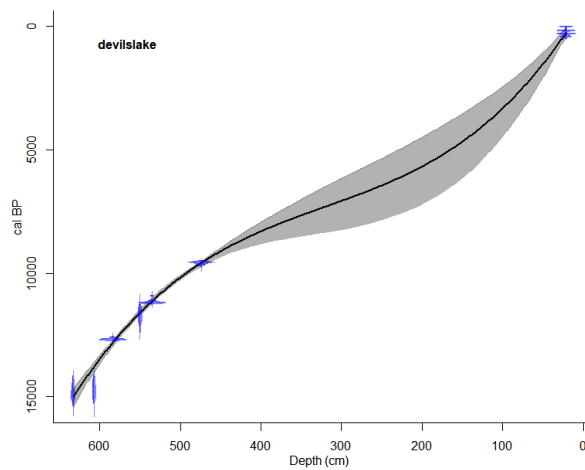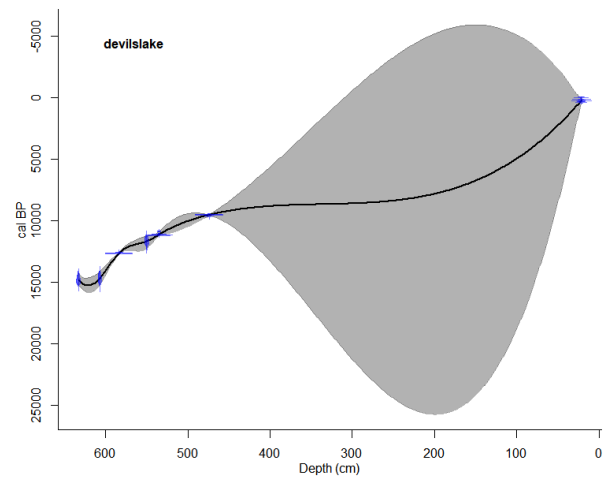
2). See R code

3).

Linear Interpolation
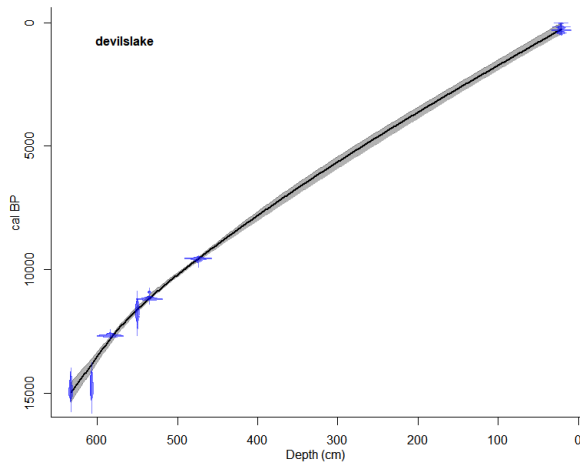

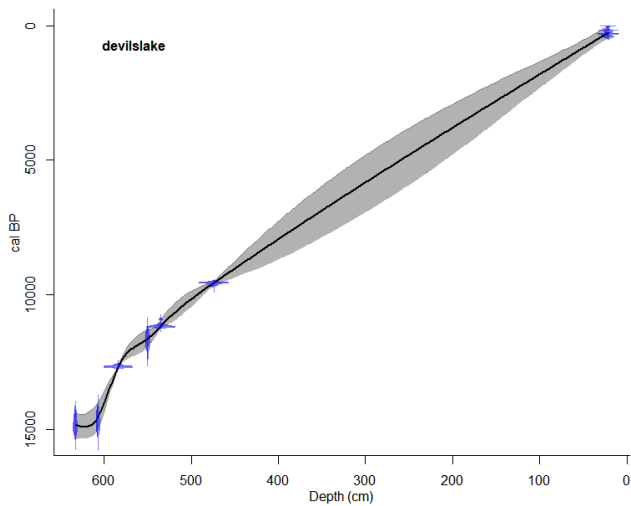Linear Regression

3rd Order Polynomial

Cublic Spline

Mid-Holocene Tsuga decline in North America (roughly the start and end, ~ 6500-5500). Min and max for 2 sigma reported:

| Linear Interpolation				
depth	min95%	max95%	best	accrate
276	5366	5608	5500	20.54
325	6398	6610	6506	20.54
Linear Regression				
296	4945	6185	5499	20.78
343	5986	7127	6498	21.74
3rd Order Polynomial				
129	3090	5519	4147	26.25
165	3833	6506	5001	21.26
Cublic Spline				
119	-6000	20172	5501	36.23
151	-6389	22926	6514	27.07

4). Smooth Spline:

<- Default smoothing parameter = 0.3

Smoothing parameter = 2   ->
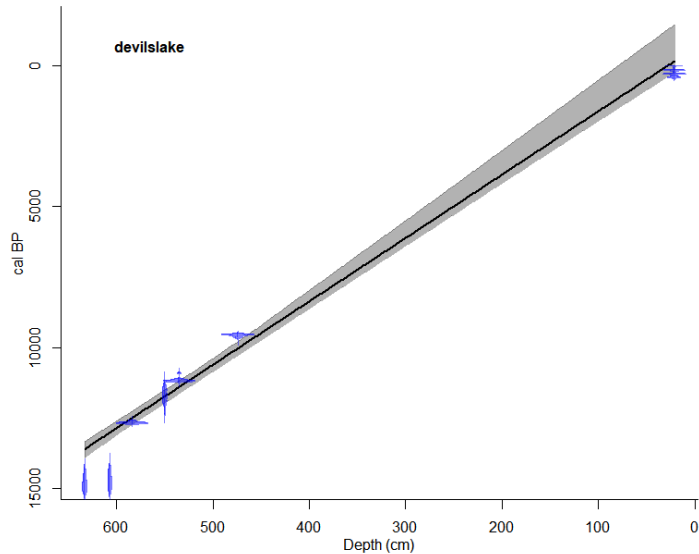
<- Smoothing parameter = 0.001

depth	min95%	max95%	best	accrate
Smoothing = 0.3 (Default)				
294	5304	5831	5512	20.73
327	6004	6510	6205	21.29
Smoothing = 2 (High)				
273	4728	5796	5508	22.5
317	5838	6774	6498	22.5
Smoothing = 0.001(Low)				
283	4506	6457	5495	20.56
332	5579	7405	6510	20.9

Bacon: Run with default parameters: Took around 4 minutes to run. Much more computationally intensive than the classical age models in clam.
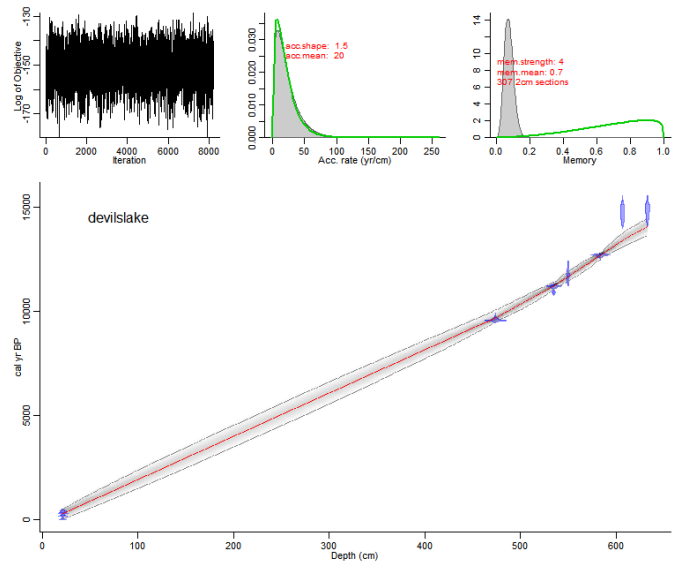

<- Default thickness (thick = 5)
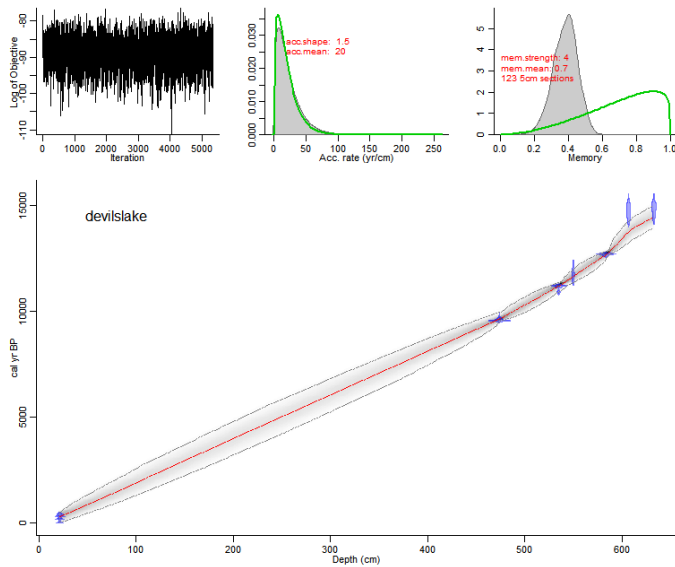
Default thickness = 5				
274.5	4696	6292	5510	5508
322.5	5715	7232	6503	6498
Thickness = 10	(Higher uncertainty)			
275.5	4454	6612	5508	5514
323.5	5474	7572	6503	6504
Thickness = 2	(Lower uncertainty)			
273.5	4978	6050	5514	5512
321.5	5992	7036	6510	6508
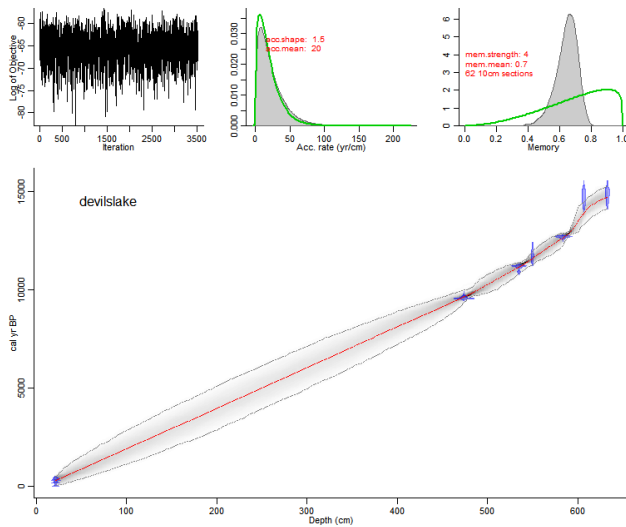
Thickness = 10

Thickness = 2
Took much longer to run; only 86% of dates fell within model's 95% range (as opposed to 100% in previous two models). Curve is much stiffer (decreased thickness increases autocorrelation).