

APPENDIX B8: Updated shell length/ meat weight relationships for use in the next assessment.

For each ocean quahog assessment, biomass of meats per tow is calculated using a shell length/meat weight relationship for quahogs of any given length ($MW = e^{\alpha}L^{\beta}$). Each of the assessment regions has its own set of alpha and beta parameters as meat weight at length varies by region. For the last several assessments (2000, 2004, 2007 and current), biomass of meats per tow for DMV and NJ has been calculated using SL/MW relationships from Murawski and Serchuk (1979). The clams they used were measured at sea and their meats were frozen for later weighing ashore.

During the 1997 NEFSC clam survey, quahogs from LI and GBK were measured and the meats weighed fresh on board the DEII to derive SL/MW relationships for those two areas. This new 1997 GBK relationship was used starting with the 2000 assessment. For the 2000 assessment, the parameters for LI were an average of the parameters derived from the fresh meats samples on the 1997 survey and those derived by Murawski and Serchuk (1979) from frozen meats (Table 1).

Since the 1997 NEFSC clam survey, fresh meat weights have also been collected during the 2002, 2005 and 2008 NEFSC clam surveys. We used only the lengths and fresh meat weights from these surveys to derive new SL/MW parameters for NJ, LI, SNE and GBK. Data was not collected from all regions every year, and no data was collected from SVA or DMV during any of those four surveys. We fit curves for each year the data was collected for each region, and then created an average curve for each region. These new relationships should give a more accurate and current estimate of biomass for the next assessment.

Table 1. Alpha and beta parameters for various SL/MW relationships by region and source. The years 1997, 2002, 2005 and 2005 are the years fresh meats were collected during the NEFSC clam survey, N refers to how many samples (clams) were used to fit the curve.

	SVA			DMV			NJ		
	alpha	beta	N	alpha	beta	N	alpha	beta	N
Murawski and Serchuk (1979)	-9.0423	2.7880		-9.0423	2.7880		-9.8472	2.9495	
1997	↓	↓ →		↓	↓				
2002							-9.4091	2.9320	117
2005							-10.0110	3.1144	155
2008							-9.6618	2.9689	324
average curves (data 1997+)	↓	↓		↓	↓		-9.6634	2.9927	
previous SARCs (2004,2007)	-9.0423	2.7880		-9.0423	2.7880		-9.8472	2.9495	

	LI			SNE			GBK		
	alpha	beta	N	alpha	beta	N	alpha	beta	N
Murawski and Serchuk (1979)	-9.1243	2.7750							
1997	-9.3102	2.8605	151				-8.8338	2.7611	72
2002				-9.0439	2.8238	158	-9.6670	2.9522	268
2005	-10.0380	3.1627	92	-9.6041	2.9108	71			
2008	-8.7270	2.5520	460	-9.5091	2.9104	243	-9.0576	2.7328	308
average curves (data 1997+)	-9.1962	2.7790		-9.3541	2.8729		-9.1276	2.7952	
previous SARCs (2000, 2004,2007)	-9.2336	2.8225		-9.1243	2.7750		-8.9691	2.7673	

The surveys in 1997, 2002, 2005 and 2008 collected SLMW data from freshly shucked meats.

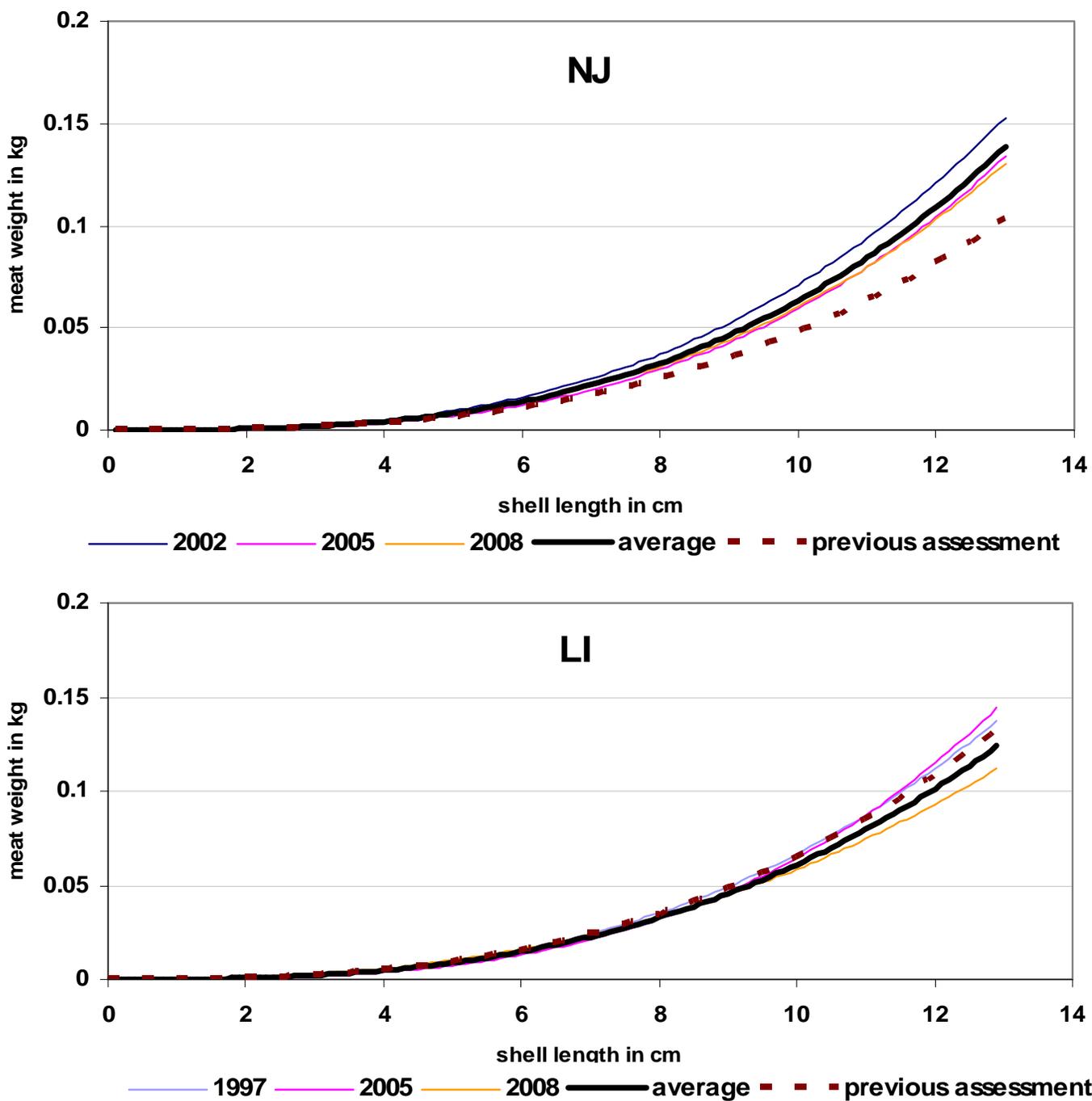


Figure 1. Shell length/ meat weight relationships for the NJ and LI assessment regions.

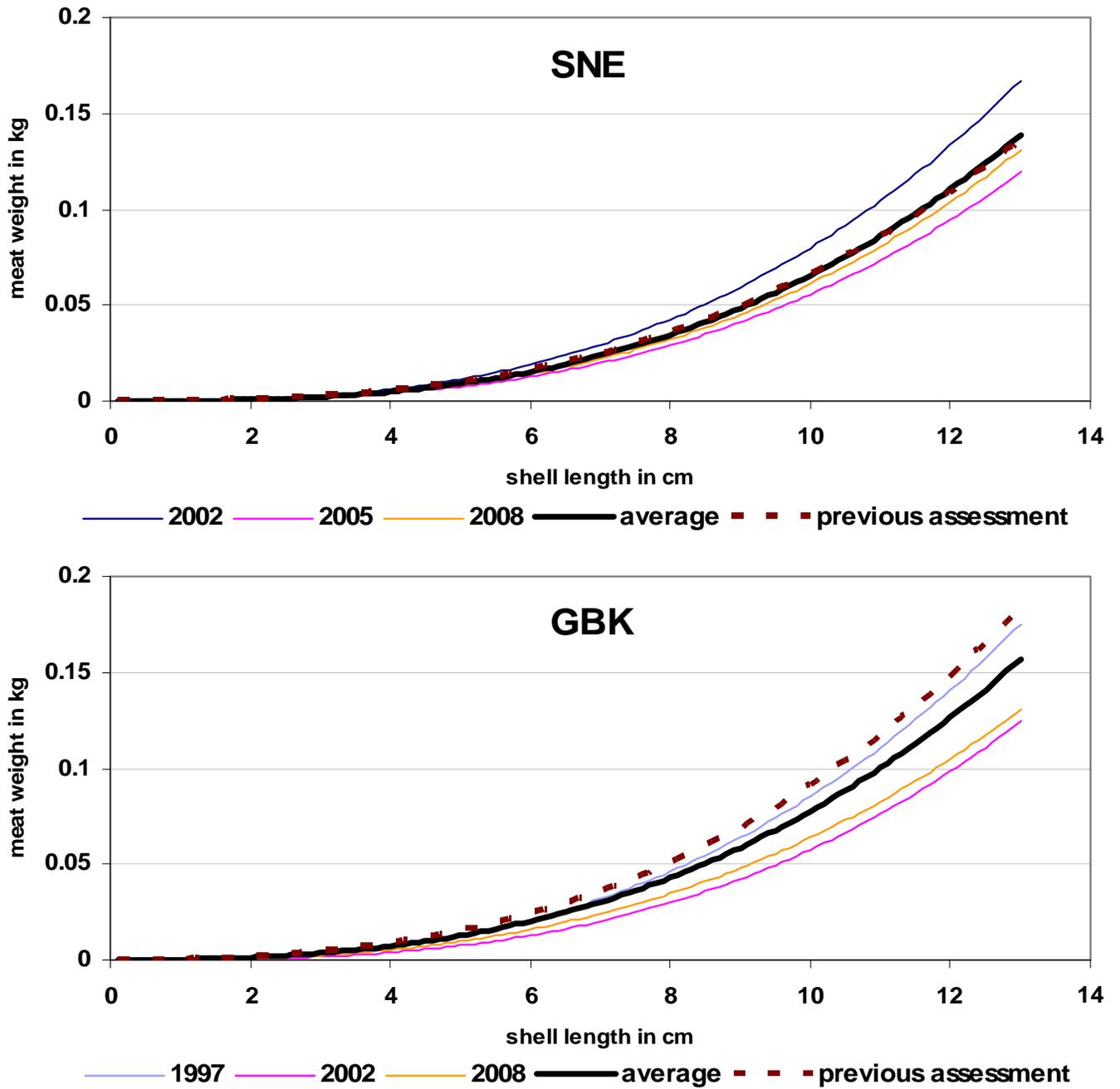


Figure 2. Shell length/ meat weight relationships for the SNE and GBK assessment regions