To account for length-based selectivity, which is implemented only for the British Columbia data, we applied a penalty to the likelihood function as follows:

Equation 6

Where is the observed length at a given age , is the corresponding estimate based on VBGF parameters , *S* is a logistic selectivity function with parameter **,** the length at which 50% of individuals (male or female) are fully selected, set to 52.976 cm (Samuel Johnson, SFU, pers. comm.)

Equation 7

As length-based selectivity is assumed constant in both the California Current and Alaskan assessments, for both estimated and observed lengths is set to 1.0 when fitting data points from those regions.

Original format from AEP:

