Using length data in population models

fish5103growth Modelling length at age and length distributions

Gunnar Stefansson and Lorna Taylor

December 19, 2016

Introduction

Several approaches exist:

- Cohort slicing and then VPA-style
- Just use lengths for recruits and then statistical models
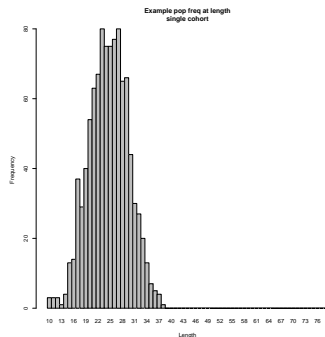- Model length dist as a part of pdy model

Figure : A simulated length distribution.

Simulating a length distribution

Population numbers can be simulated using the stock equation

Mean length at age can be generated from a von Bertalanffy curve

The distribution of length at age can be generated from the mean and standard deviation assuming a Gaussian distribution

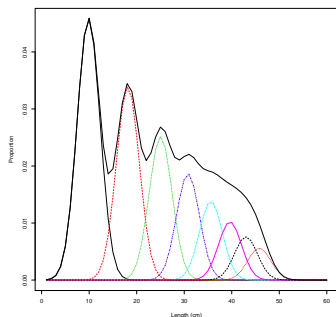The population length distribution is generated by adding the age-based length distributions

Figure : Simulated proportional length distribution of individual age groups and the total population in equilibrium.