

Figure 1. Spawning biomass distributions.



Figure 2. Time series of populations at different slopes.



Figure 3. (a) Lambda1 as a function of the spawning biomass distribution CV. (b) 1/DR as a function of the spawning biomass distribution CV.



Figure 4. Spectrum of all 16 cod populations. Y-axis is log scale.



Figure 5. Cumulative variance with higher frequencies. Note: y-axis starts at 0.7.



Figure 6. (a) Relationship between total variance and lambda1. (b) Relationship between fraction of high frequency variance at 1/DR.



Figure 7. (a) The color of each cell indicates the standard deviation of recruitment relative to mean recruitment for a single population at different levels of k (slope of the S-R curve). Number in parentheses next to each population is peak spawning age. (b) Each cell represents the fraction of total variance in recruitment time series that is concentrated at high frequencies. Since the area under the spectra curve is total variance in a time series, fraction of high frequency variance is calculated by dividing the area under the spectra curve at high frequencies by the total area under the curve across all frequencies**.** In both 3(a) and 3(b) dark purple colors represent lower values and bright orange represents higher values. (c) The difference in percent of low frequency variance for all populations between the highest (slope=0.91) and smallest (slope=0.1) slopes. Differences in percent were calculated from output in 3(b): values in the furthest right column (when slope is=0.91) were subtracted from values in the furthest left column (when slope is=0.1) and plotted as bars in 3(c). **Populations are in order by CV of spawning biomass distribution.**