

Age-Structured Populations

Age-structured vital rates have manifold implications for population dynamics and evolution. Age-structure is tabulated with life tables, and these can be used to derive important population parameters. The literature using life tables is diverse and extensive, so I have cited some recent books that can be used as entry points. Caswell's book is the most ecological in orientation, Roff and Stearns' books straddle ecology and evolution with Roff's the more ecological of the two, and Charlesworth's is of most strict interest for evolutionary issues. The papers cited here are those I have had reason to mention in today's lecture, though several are classics, especially the ones by Cole and Gadgil and Bossert.

Bell, G. 1980. The costs of reproduction and their consequences. *American Naturalist* 116:45-76.

Caswell, H. 2001. *Matrix Population Models*, 2nd ed. Sinauer Assoc., Sunderland, MA.

Charlesworth, B. 1980. *Evolution in Age-Structured Populations*. Cambridge Univ Press, Cambridge.

Charnov, E. L., and W. M. Schaffer. 1973. Life history consequences of natural selection: Cole's result revisited. *American Naturalist* 107:791-793.

Cole, L. C. 1954. The population consequences of life history phenomena. *Quarterly Review of Biology* 29:103-137.

Fox, C. W., D. A. Roff, and D. J. Fairbairn. 2001. *Evolutionary Ecology. Concepts and Case Studies*. Oxford University Press, Oxford. *Part II. Life Histories pp 99 – 189, 7 chapters.*

Gadgil, M., and W. H. Bossert. 1970. Life historical consequences of natural selection. *American Naturalist* 104:1-24.

Roff, D. A. 1984. The evolution of life history parameters in teleosts. *Canadian Journal of Fisheries and Aquatic Sciences* 41:984-1000.

Roff, D. A. 1992. *The Evolution of Life Histories*. Chapman & Hall, NY.

Roff, D. A. 2002. *Life History Evolution*. Sinauer Assoc., Sunderland, MA

Rose, M. R. 1991. *The Evolutionary Biology of Aging*. Oxford University Press, Oxford.

Stearns, S. C. 1992. *The Evolution of Life Histories*. Oxford University Press, Oxford.