

**For the 0 to 8+ age classes, at each iteration calculate:**

**Natural Mortality:**

- The proportion (and number) of mature and immature individuals surviving natural mortality (see equation 2)

**Fishing Mortality:**

- After 50 iterations, fishing mortality rate (equation 3 and subsequent text).
- The proportion (and number) of individuals surviving fishing mortality (equation 4)

**Maturity:**

- The proportion (and number) of immature individuals that mature (equation 5).
- For non-sex-changers, the sex ratio of the newly matured individuals (see Sex change, and sex ratio of non-sex-changing populations in METHODS). Update population structure accordingly

**Sex change:**

- For sex-changers, the proportion (and number) of males that become females (equation 6). Update population structure accordingly.

**At each iteration, use the number and length (equation 1) of all males and females to calculate:**

**Reproduction:**

- The number of sperm (in millions) and eggs produced by each age-class (see Reproduction in METHODS).
- Total number sperm and eggs produced
- The proportion (and number) of eggs fertilised (equation 7 and subsequent text).

**Recruitment:**

- The number of recruits (equation 8).
- Apply stochastic element to recruitment if applicable.

**Aging the population:**

Move all individuals up one age class (except for those of age 8+, which remained in that age class until death). Add recruits to age-class 0.