

Equilibrium solutions:

$$\frac{dM}{dt} = 0 \quad \text{and} \quad \frac{dF}{dt} = 0$$

Male: $-\alpha M + \beta MF = M(-\alpha + \beta F) = 0$
 \Rightarrow either $M=0$ or $F = \alpha/\beta$.

Female: $-\eta F + \lambda MF = F(-\eta + \lambda M) = 0$,
 \Rightarrow either $F=0$ or $M = \eta/\lambda$

2 equilibrium states 1. $(M, F) = (0, 0) \leftarrow$ both populations die out

2. $M = \eta/\lambda$, $F = \alpha/\beta$ - M & F coexist at constant levels