- Generation 3:

$$F_3 = \Delta F + (1-\Delta F)\cdot F_2$$

$$\vdots$$

- Generation t: $F_t = \Delta F + (1-\Delta F)\cdot F_{t-1}$

Recursion for inbreeding coefficient F_t after t generations

Solve for ΔF:

$$F_t = \Delta F + (1-\Delta F)\cdot F_{t-1}$$

$$= \Delta F + F_{t-1} - \Delta F \cdot F_{t-1}$$

$$= (1-F_{t-1})\Delta F + F_{t-1}$$

$$\Delta F = \frac{F_t - F_{t-1}}{1-F_{t-1}}$$

- Panmictic Index : $P = 1-F$

$$1-\Delta F = \frac{[1-F_{t-1}] - F_t + F_{t-1}}{1-F_{t-1}} = \frac{1-F_t}{1-F_{t-1}} = \frac{P_t}{P_{t-1}}$$