BauchModel_1

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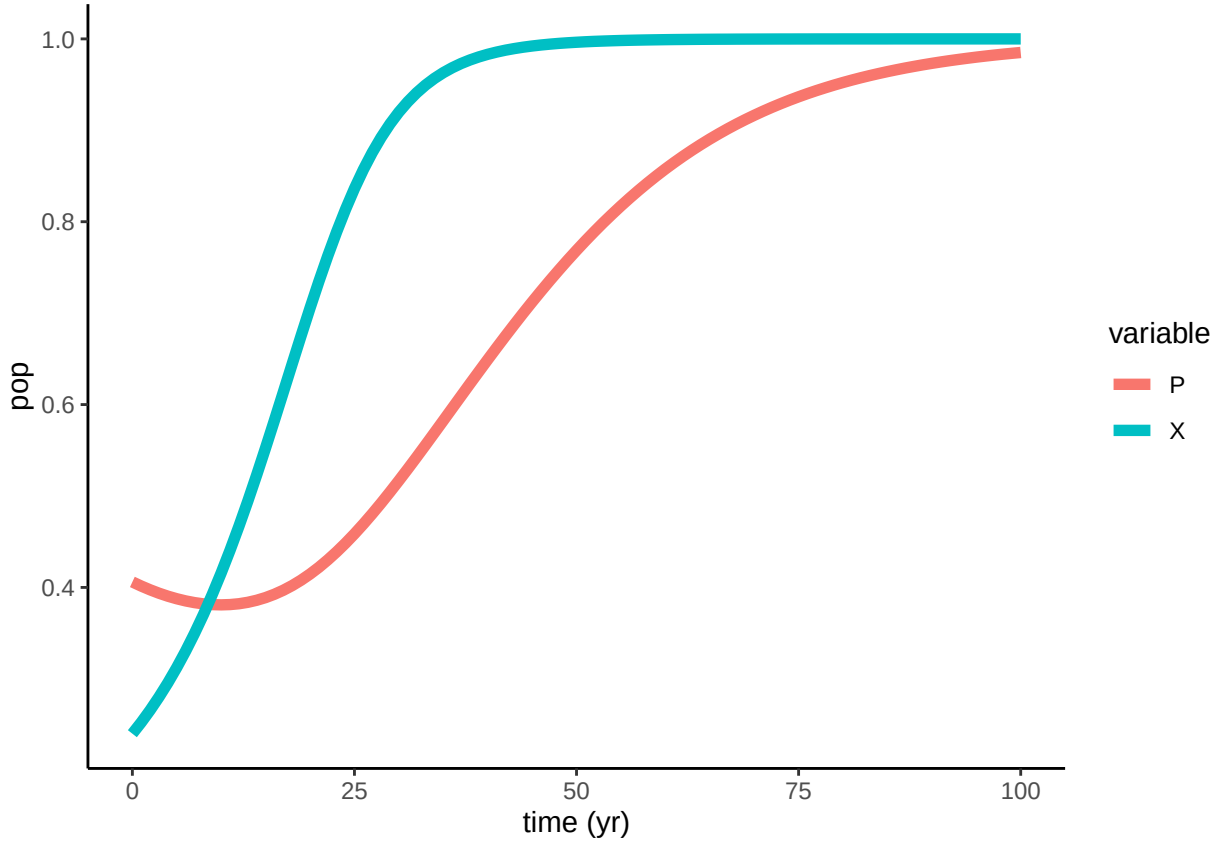


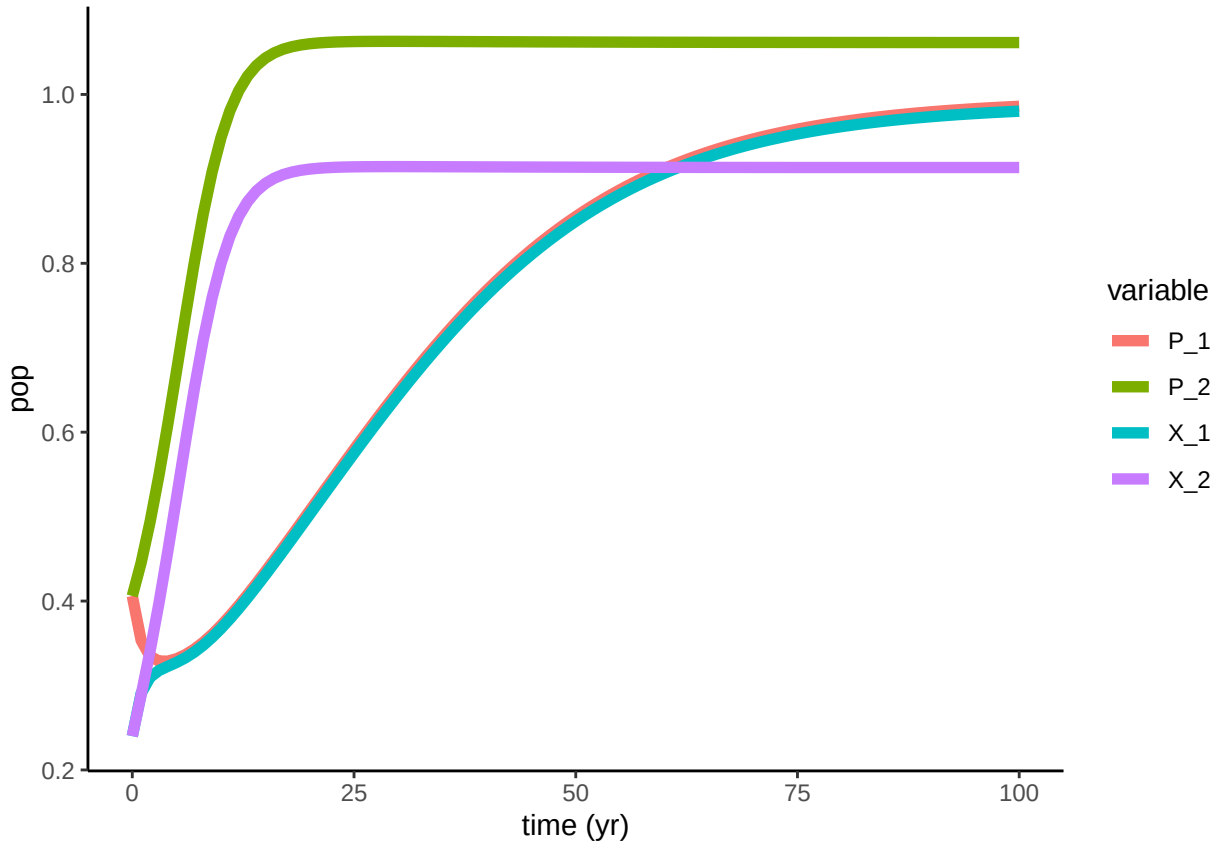
First model tested:

$\frac{dP_1}{dt} = r_1 P_1(1-P_1) - \frac{h_1 * P_1(1-X_1)}{P_1+s_1} + \rho_1 * \frac{P_2-P_1}{2}$

$\frac{dX_1}{dt} = k_1 X_1(1-X_1)[d_1(2X_1-1) + \frac{1}{P_1+c_1} - w_1] + k_1 X_2(1-X_2)[d_1(2X_2-1) + \frac{1}{P_1+c_1} - w_1]$

$\frac{dP_2}{dt} = r_2 P_2(1-P_2) - \frac{h_2 * P_2(1-X_2)}{P_2+s_2} + \rho_2 * \frac{P_1-P_2}{2}$

$\frac{dX_2}{dt} = k_2 X_2(1-X_2)[d_2(2X_2-1) + \frac{1}{P_2+c_2} - w_2] + k_2 X_1(1-X_1)[d_2(2X_1-1) + \frac{1}{P_2+c_2} - w_2]$


1.0
0.8
0.6
0.4
0.2
pop
0
25
50
75
100
time (yr)
variable
P_1
P_2
X_1
X_2

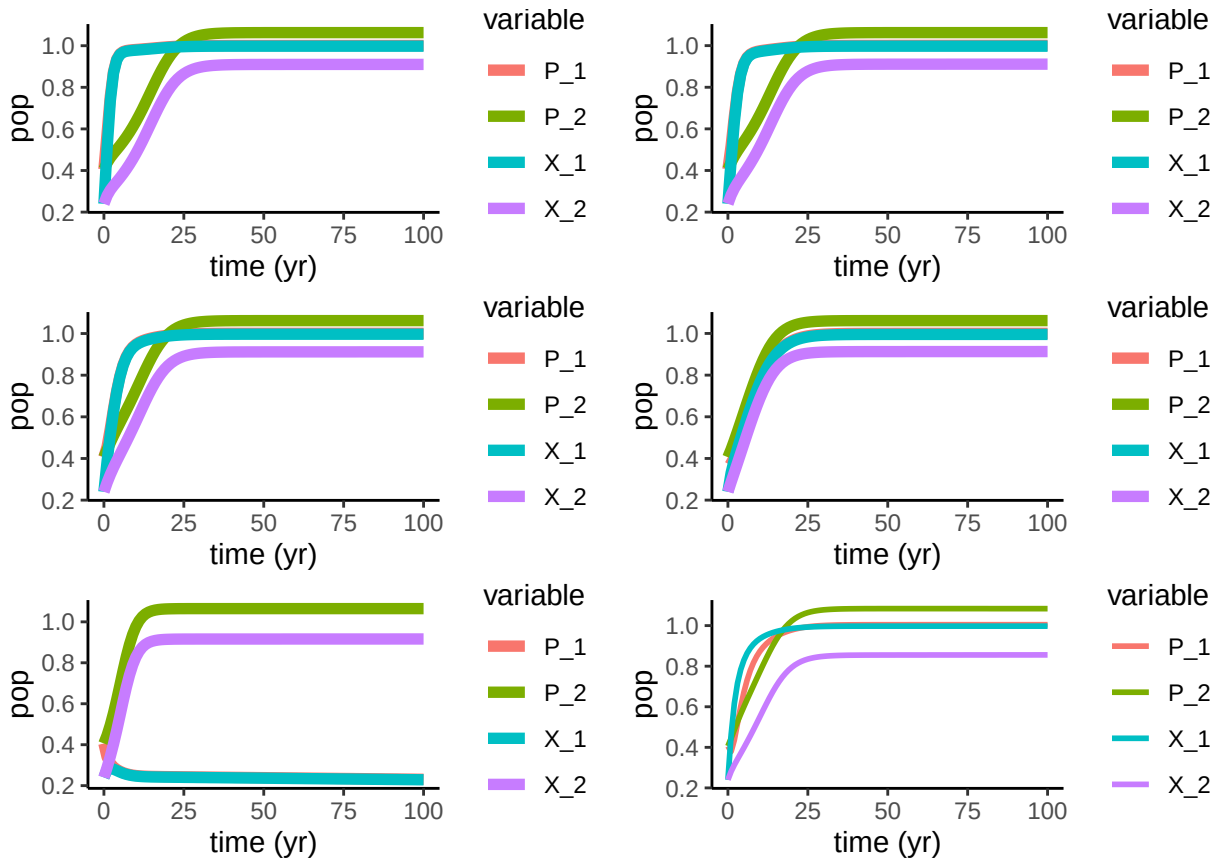


Figure 1: R - Net growth/fecundity

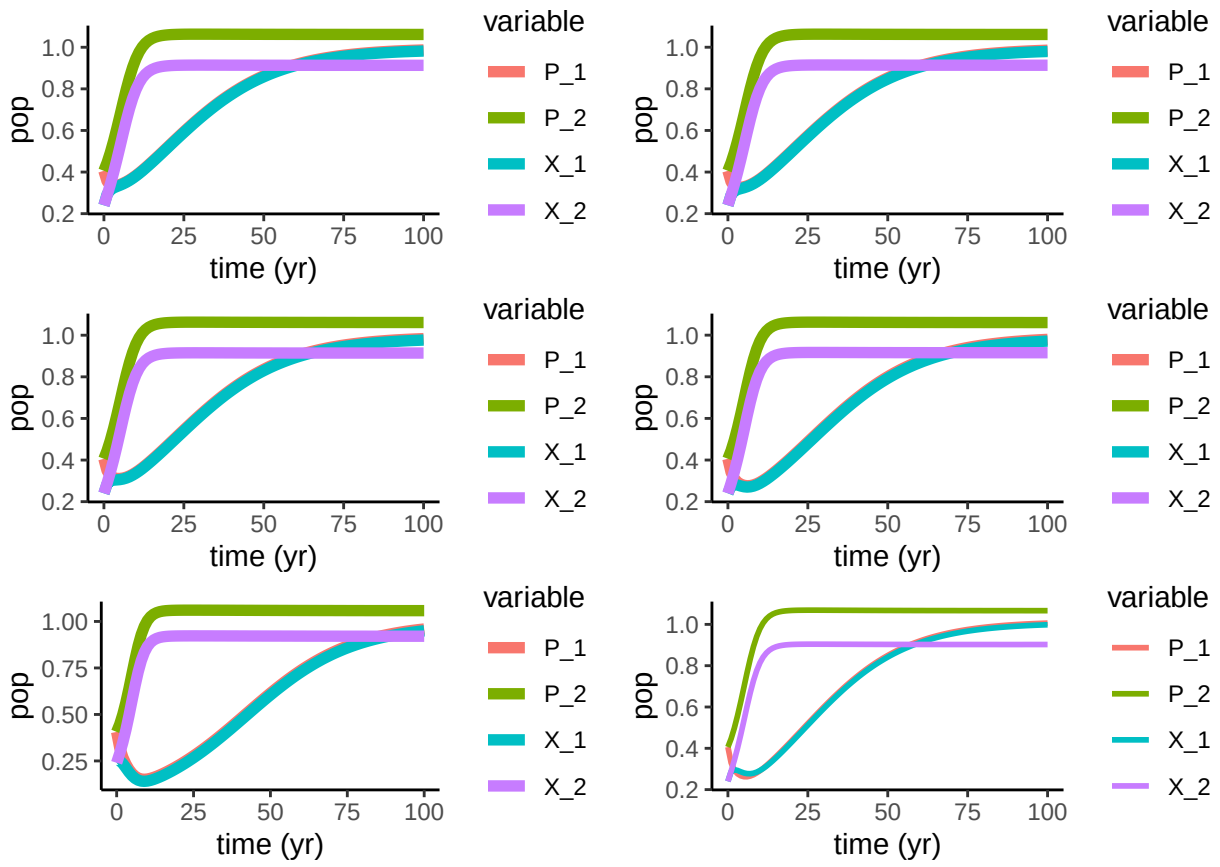


Figure 2: S - supply and demand

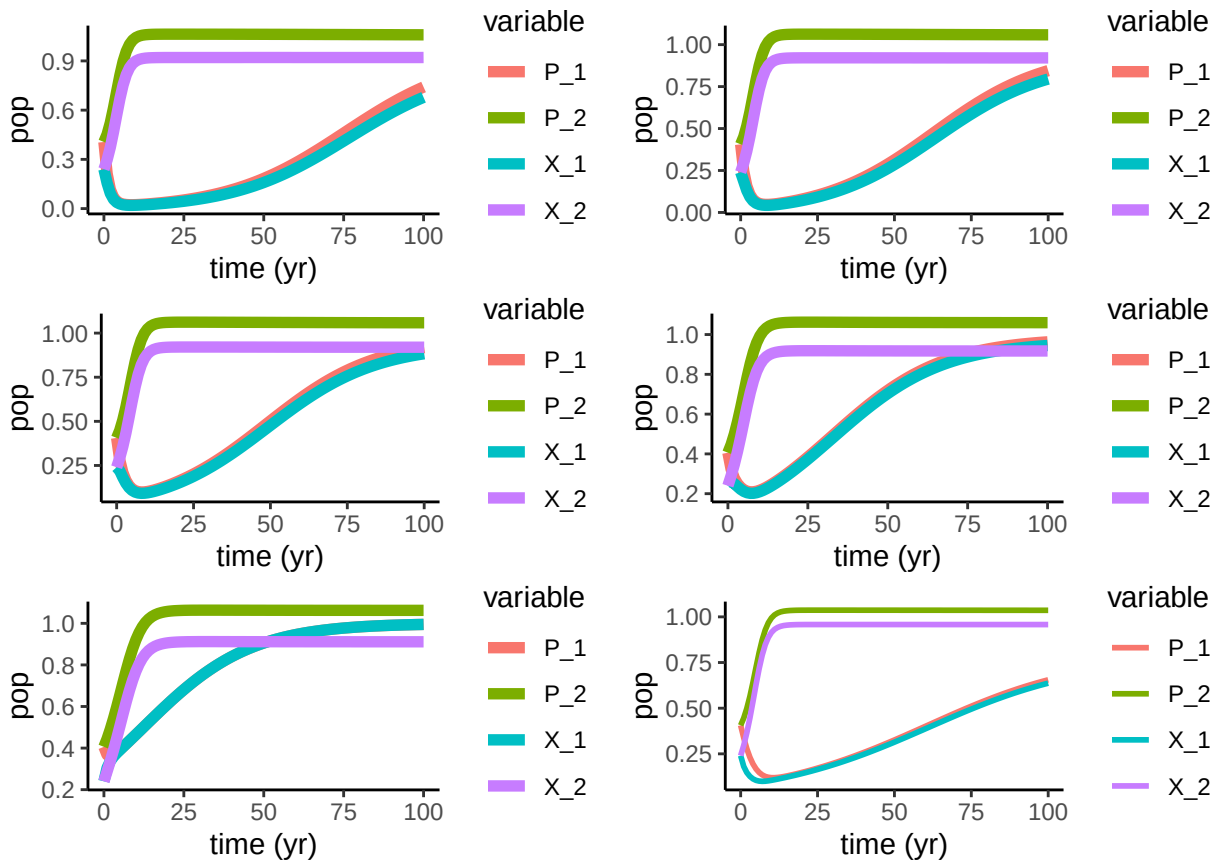


Figure 3: h - Harvesting efficiency

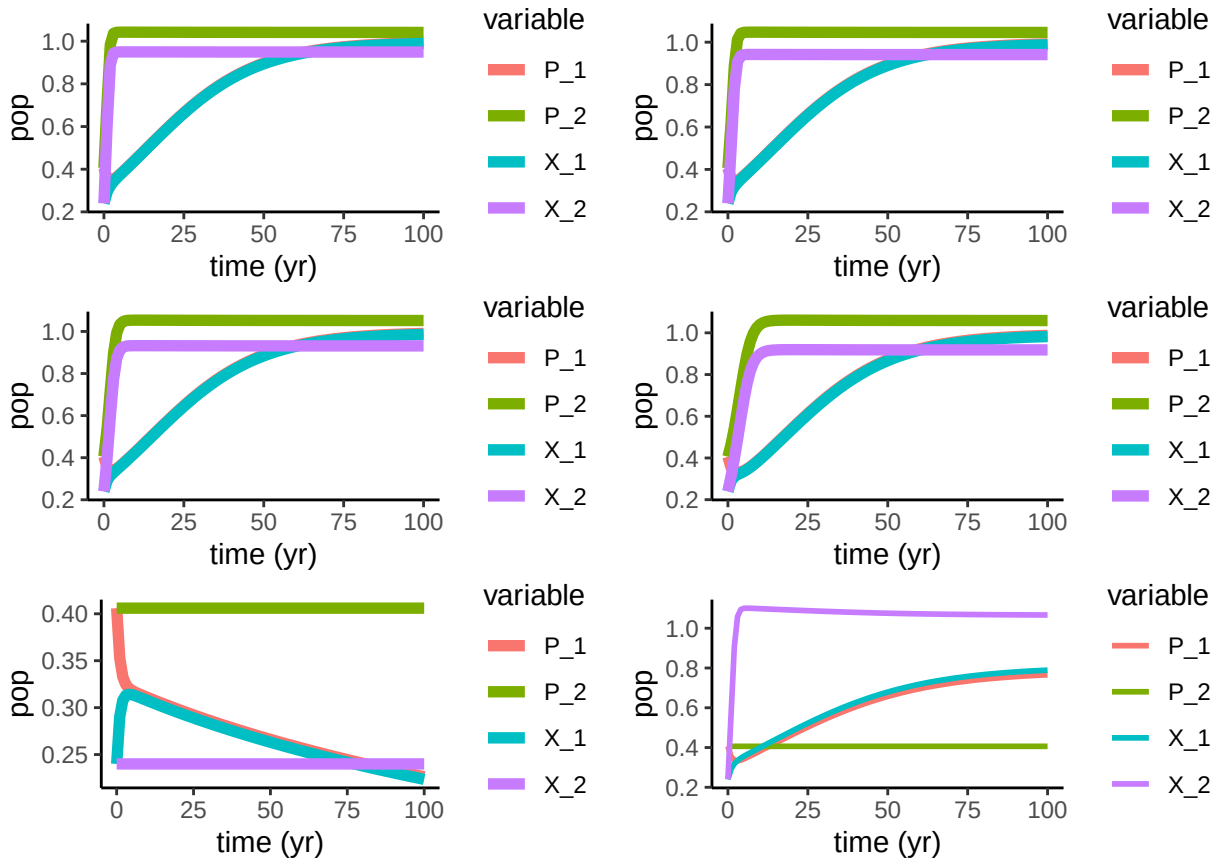


Figure 4: K - Social learning rate

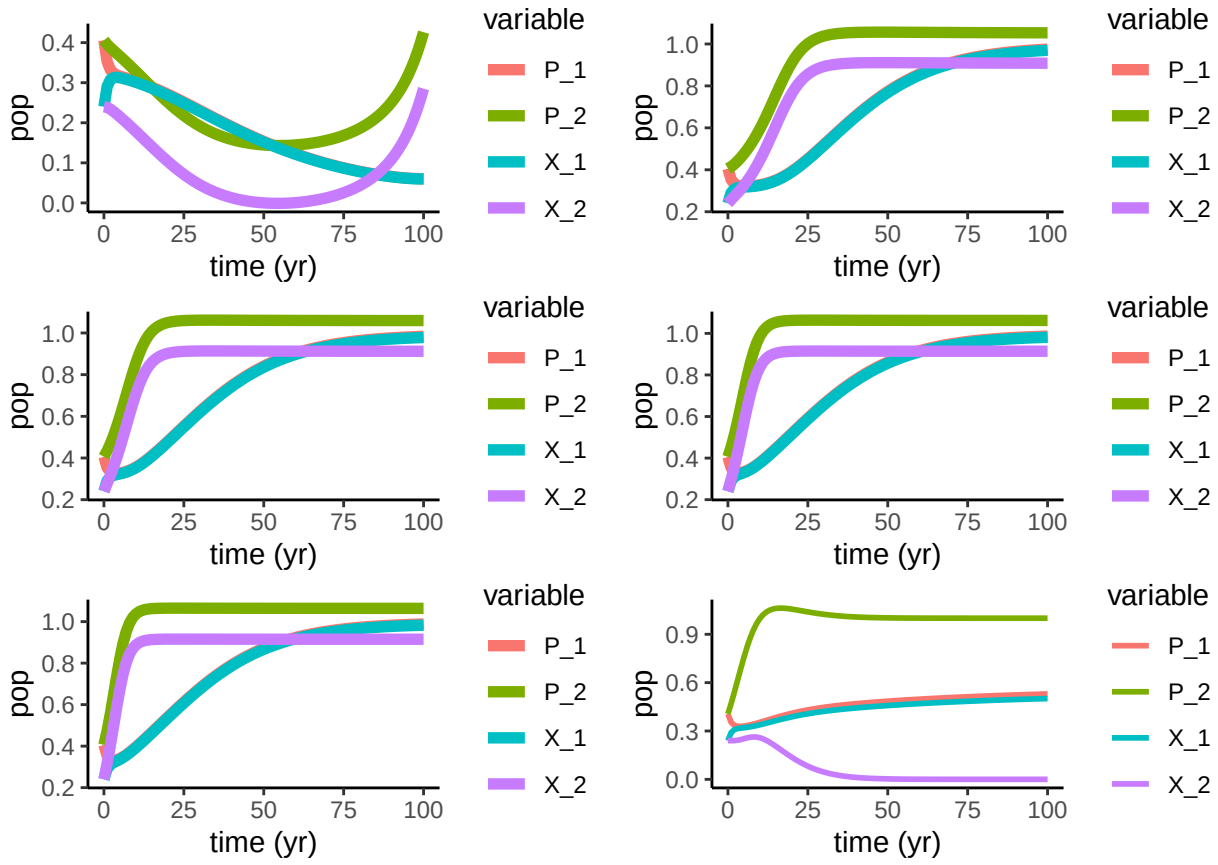


Figure 5: w - conservation costs

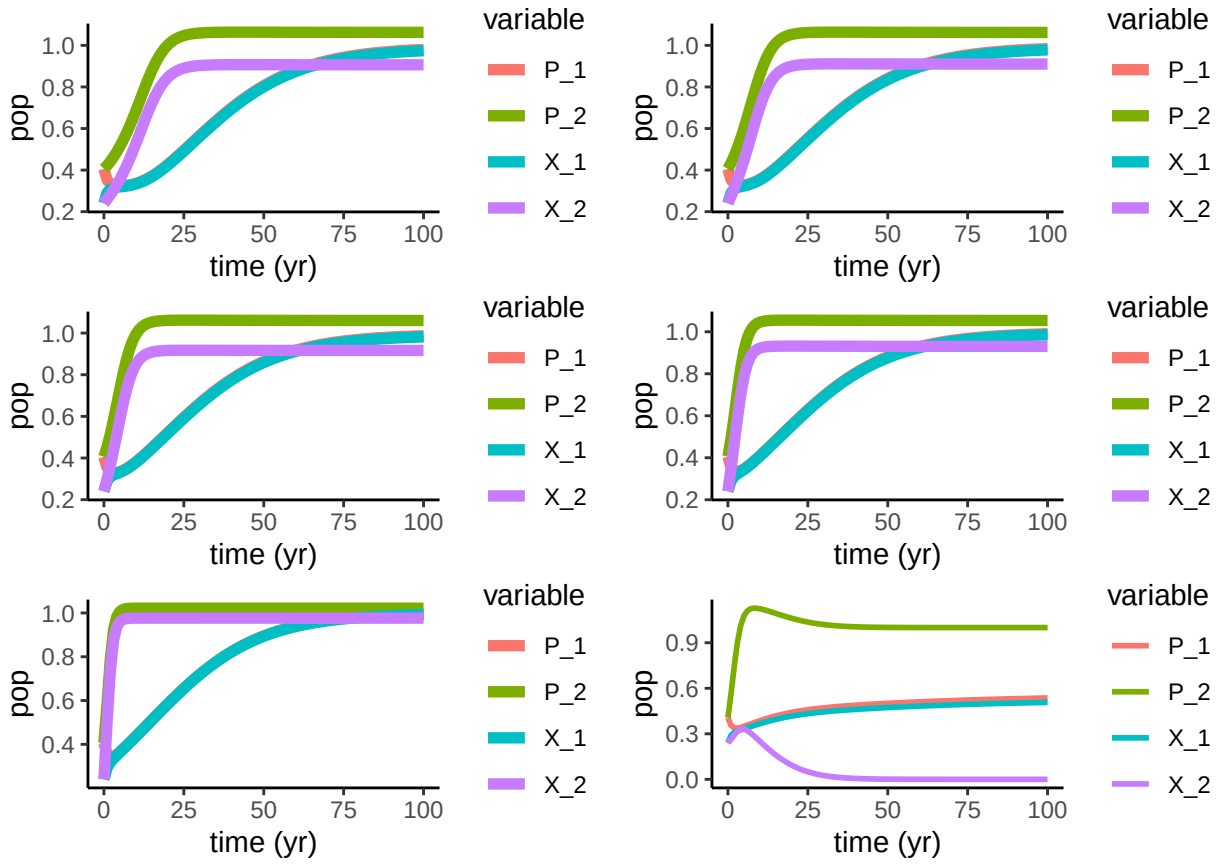


Figure 6: c - rarity valuation param

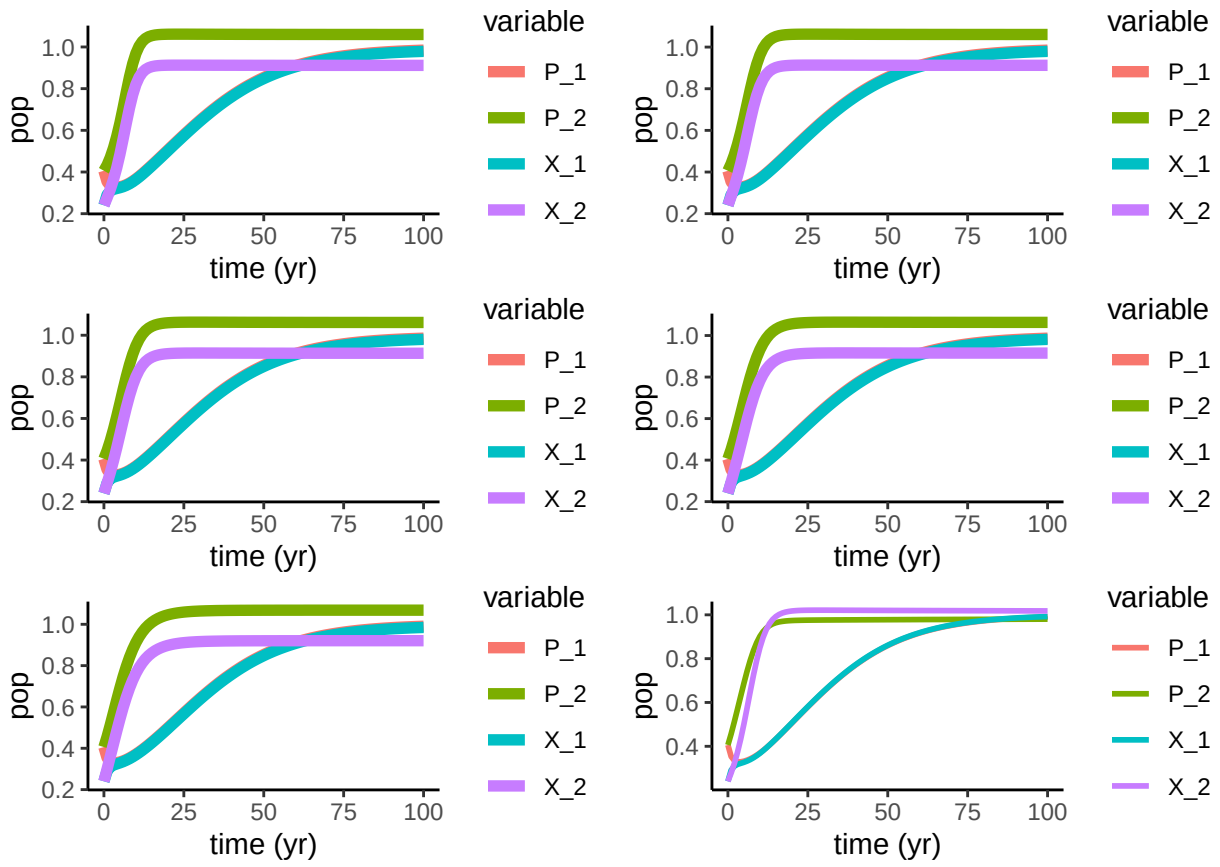


Figure 7: d - social norm strength

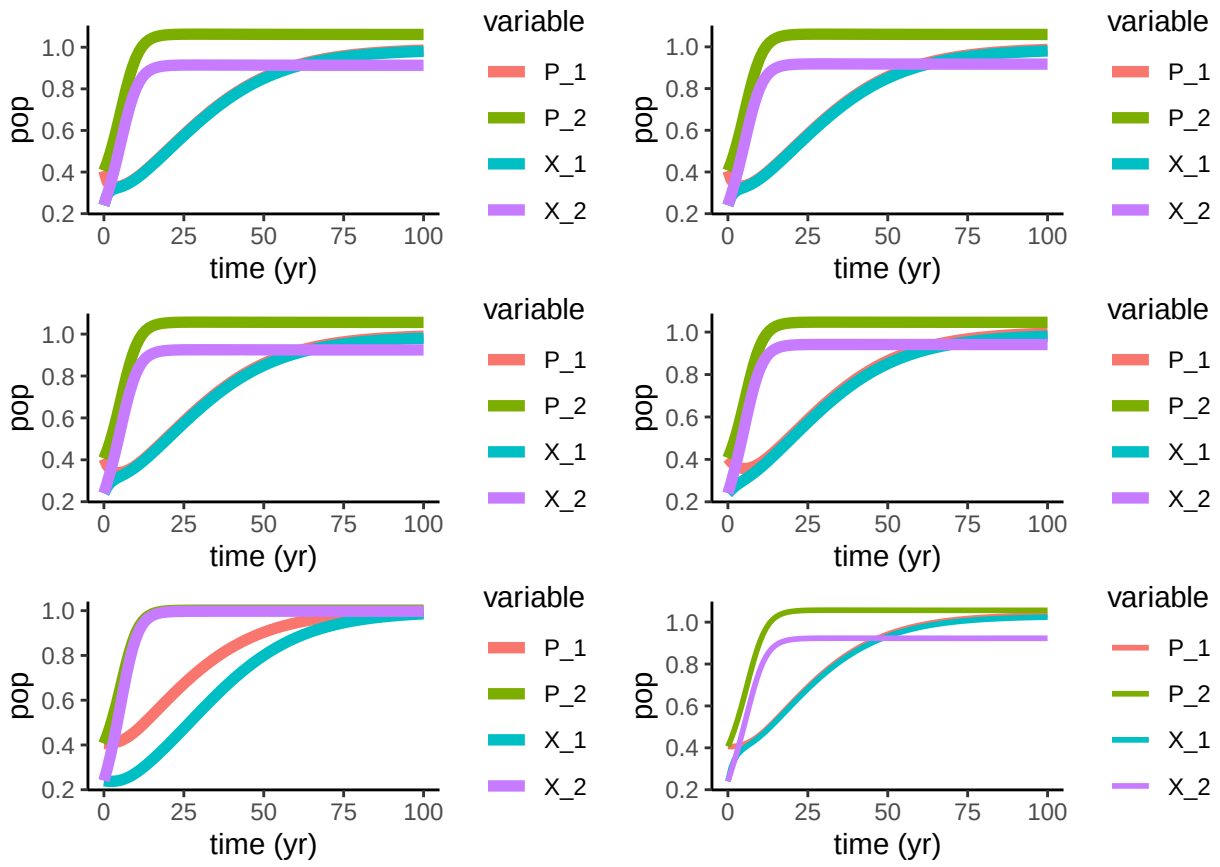


Figure 8: roe - fish diffusion