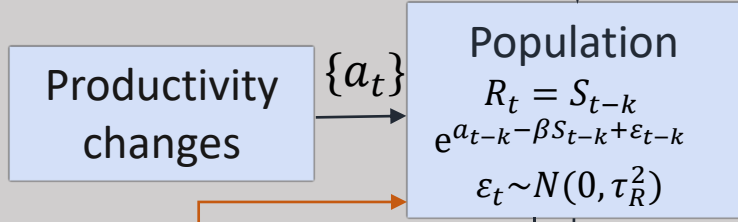


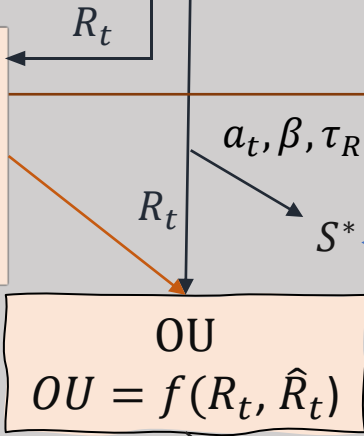
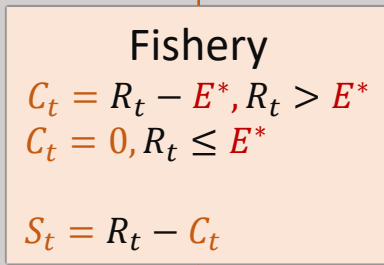
Operating model

Start of year t



End of t

S_t



Assessment

$\{S_i\}_{i=1}^{t-1}$

Data collection

σ_S^2, σ_C^2

$S_t^{obs} = S_t e^{v_{s,t}}$

$C_t^{obs} = C_t e^{v_{c,t}}$

$\{C_i\}_{i=k+1}^{t-1}$

Assessment model

XSR, KF, or TSR

Failed to estimate optimal escapement \hat{S}^*

$\hat{a}_t, \hat{\beta}, \hat{\tau}_r$

$\hat{S}^* = f(\hat{a}_t, \hat{\beta}, \hat{\tau}_r)$

$R_t(1 - h_m)$

E_{pc}^*

Set escapement goal E' using a harvest rate $h_m = 0.2$

$E_{sm}^* = (1 + M)E_{pc}^*$

Apply a safety margin (M)

$E^* = OU \times E_{sm}^*$

Apply outcome uncertainty (OU)

Management

E^*