

COMPASS Base Survival model

$$\begin{aligned}\log(S_{g,r}) = & \gamma + (\alpha_0 + \alpha_1 \cdot Flow + \alpha_2 \cdot Temp + \alpha_3 \cdot Temp^2 + \alpha_4 \cdot Spill) \cdot d \\ & + (\beta_0 + \beta_1 \cdot Flow + \beta_2 \cdot Temp + \beta_3 \cdot Temp^2 + \beta_4 \cdot Spill) \cdot t + \varepsilon_{g,r}\end{aligned}$$

locally formulated:

$$\log(S) = - (p_x \cdot dist + p_t \cdot time)$$

COMPASS XT Survival model

$$\log(S) = -\frac{1}{\lambda} \sqrt{x^2 + \omega^2 t^2}$$