Multispecies Model

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Model Description

- Species 1

$$\frac{dA_1}{dt} = -qE_1A_1 + m_1A_1 + s_1J_1$$

$$\frac{dJ_1}{dt} = -c_{J_1,J_2}J_1J_2 - \frac{c_{J_1,A_1}v_1J_1A_1}{h_1 + v_1 + c_{J_1,A_1}} - \frac{c_{J_1,A_2}v_1J_1A_2}{h_1 + v_1 + c_{J_1,A_2}} + \alpha_1A_1e^{-\beta_1A_1} + S_1$$

- Species 2

$$\frac{dA_2}{dt} = -qE_2A_2 + m_2A_2 + s_2J_2$$

$$\frac{dJ_2}{dt} = -c_{J_2,J_1}J_2J_1 - \frac{c_{J_2,A_2}v_2J_2A_2}{h_2 + v_2 + c_{J_2,A_2}} - \frac{c_{J_2,A_1}v_2J_2A_1}{h_2 + v_2 + c_{J_2,A_1}} + \alpha_2A_2e^{-\beta_2A_2} + S_2$$

	Parm definitions
s1	Juvenile survival sp1
m1	adult natural mortality
cJ1A1	cannibalism
cJ1A2	predation by sp2
cJ1J2	Juvenile competition
v1	rate sp1 juveniles enter FA
a1	Ricker parm alpha
b1	Ricker parm beta
h1	rate sp1 juveniles leave FA
S1	stocking species 1
qE1	harvest rate sp1
s2	Juvenile survival sp2
m2	adult natural mortality
cJ2A2	cannibalism
cJ2A1	predation by sp1
cJ2J1	Juvenile competition
v2	rate sp2 juveniles enter FA
a2	Ricker parm alpha
b2	Ricker parm beta
h2	rate sp2 juveniles leave FA
S2	stocking species 2
qE2	harvest rate sp2