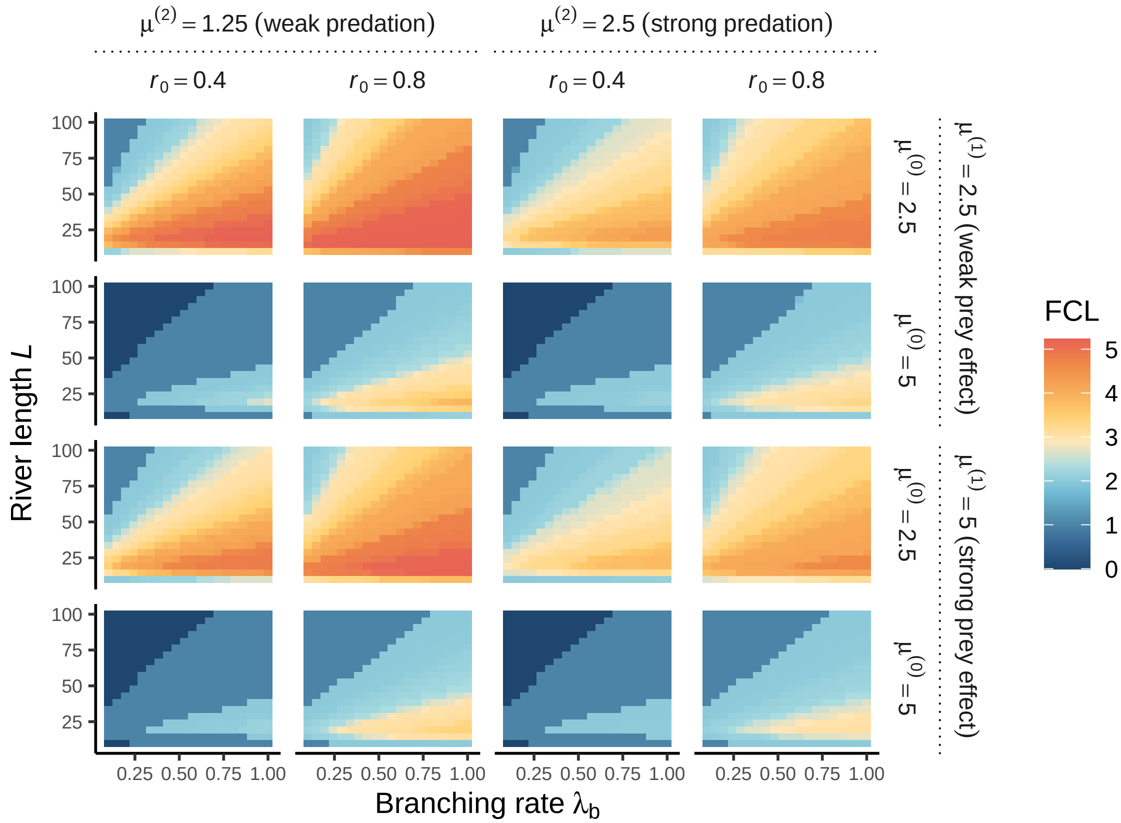

Figure 1: Numerical prediction with low propagule $g_0 = 75$, low synchrony $\rho = 0.25$, and weak omnivory $\theta = 0.25$. Heatmaps of FCL are expressed as a function of ecosystem size (river length, L) and complexity (branching rate, λ_b), with rows and columns displaying different combinations of resource supply (r_0), disturbance regime ($\mu^{(0)}$), prey effect ($\mu^{(1)}$), and predation effect ($\mu^{(2)}$). Each cell represents the average FCL of five food webs. Additional parameter values are: habitat density $h = 2.5$, dispersal capability $\delta_0 = 0.5$, and scaling exponent $\psi = 0.5$.

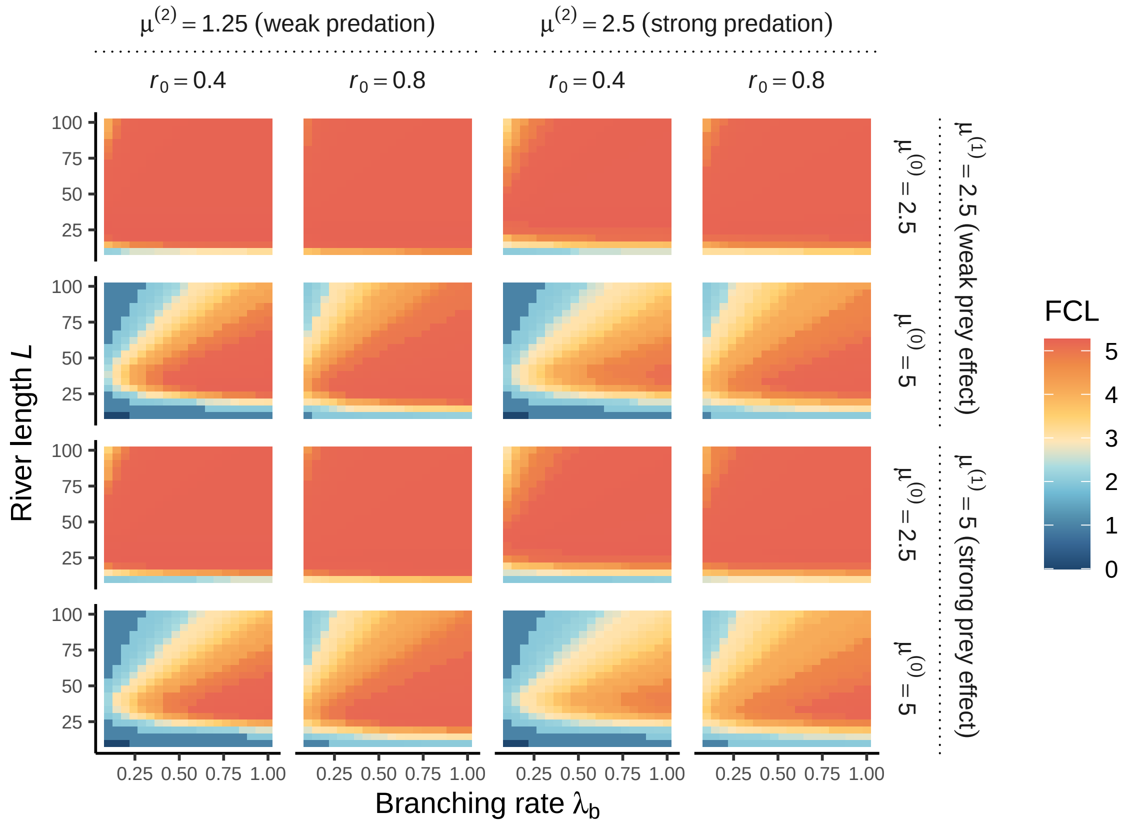

Figure 2: Numerical prediction with high propagule $g_0 = 150$, low synchrony $\rho = 0.25$, and weak omnivory $\theta = 0.25$. Heatmaps of FCL are expressed as a function of ecosystem size (river length, L) and complexity (branching rate, λ_b), with rows and columns displaying different combinations of resource supply (r_0), disturbance regime ($\mu^{(0)}$), prey effect ($\mu^{(1)}$), and predation effect ($\mu^{(2)}$). Each cell represents the average FCL of five food webs. Additional parameter values are: habitat density $h = 2.5$, dispersal capability $\delta_0 = 0.5$, and scaling exponent $\psi = 0.5$.

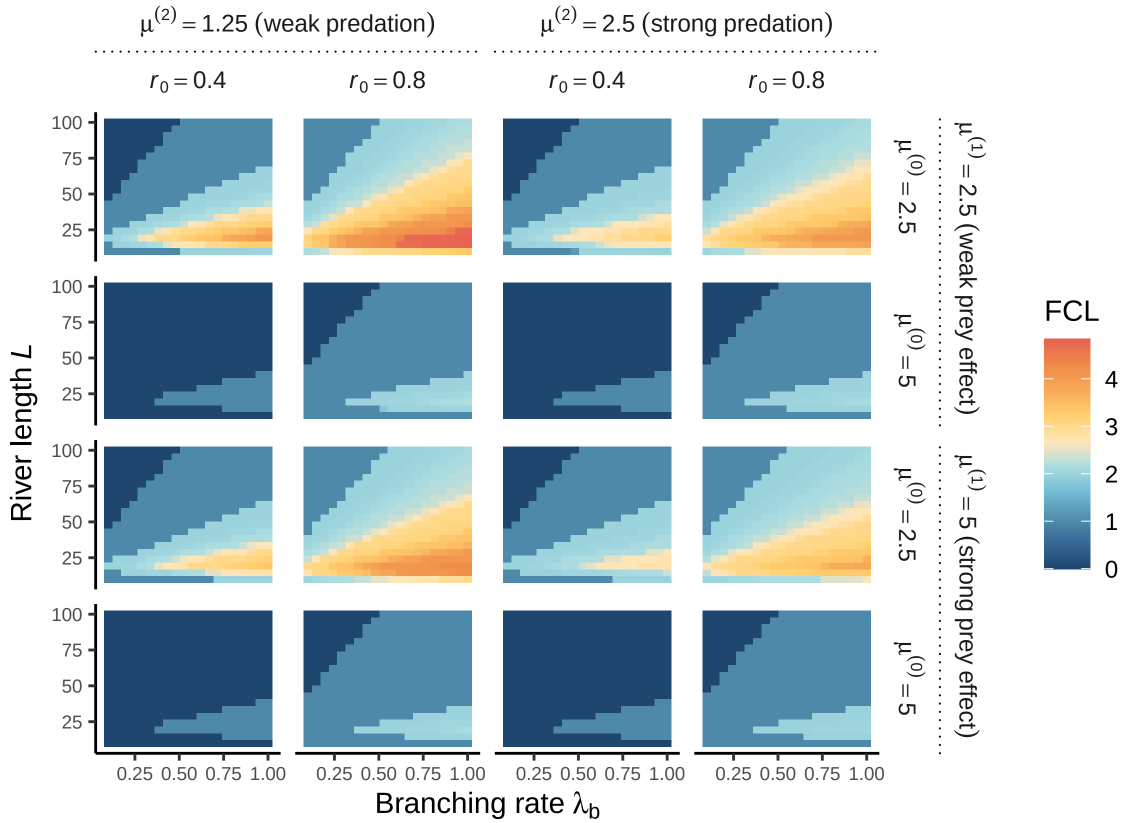

Figure 3: Numerical prediction with low propagule $g_0 = 75$, high synchrony $\rho = 0.5$, and weak omnivory $\theta = 0.25$. Heatmaps of FCL are expressed as a function of ecosystem size (river length, L) and complexity (branching rate, λ_b), with rows and columns displaying different combinations of resource supply (r_0), disturbance regime ($\mu^{(0)}$), prey effect ($\mu^{(1)}$), and predation effect ($\mu^{(2)}$). Each cell represents the average FCL of five food webs. Additional parameter values are: habitat density $h = 2.5$, dispersal capability $\delta_0 = 0.5$, and scaling exponent $\psi = 0.5$.

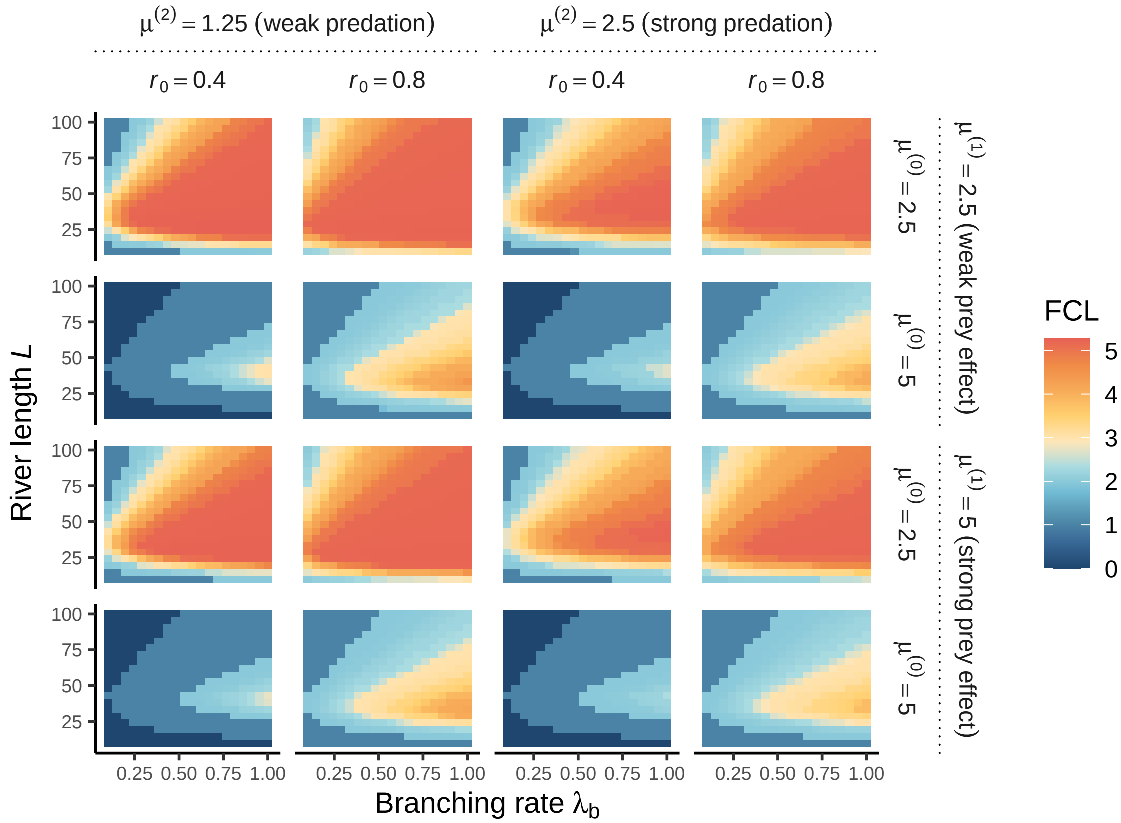

Figure 4: Numerical prediction with high propagule $g_0 = 150$, high synchrony $\rho = 0.5$, and weak omnivory $\theta = 0.25$. Heatmaps of FCL are expressed as a function of ecosystem size (river length, L) and complexity (branching rate, λ_b), with rows and columns displaying different combinations of resource supply (r_0), disturbance regime ($\mu^{(0)}$), prey effect ($\mu^{(1)}$), and predation effect ($\mu^{(2)}$). Each cell represents the average FCL of five food webs. Additional parameter values are: habitat density $h = 2.5$, dispersal capability $\delta_0 = 0.5$, and scaling exponent $\psi = 0.5$.

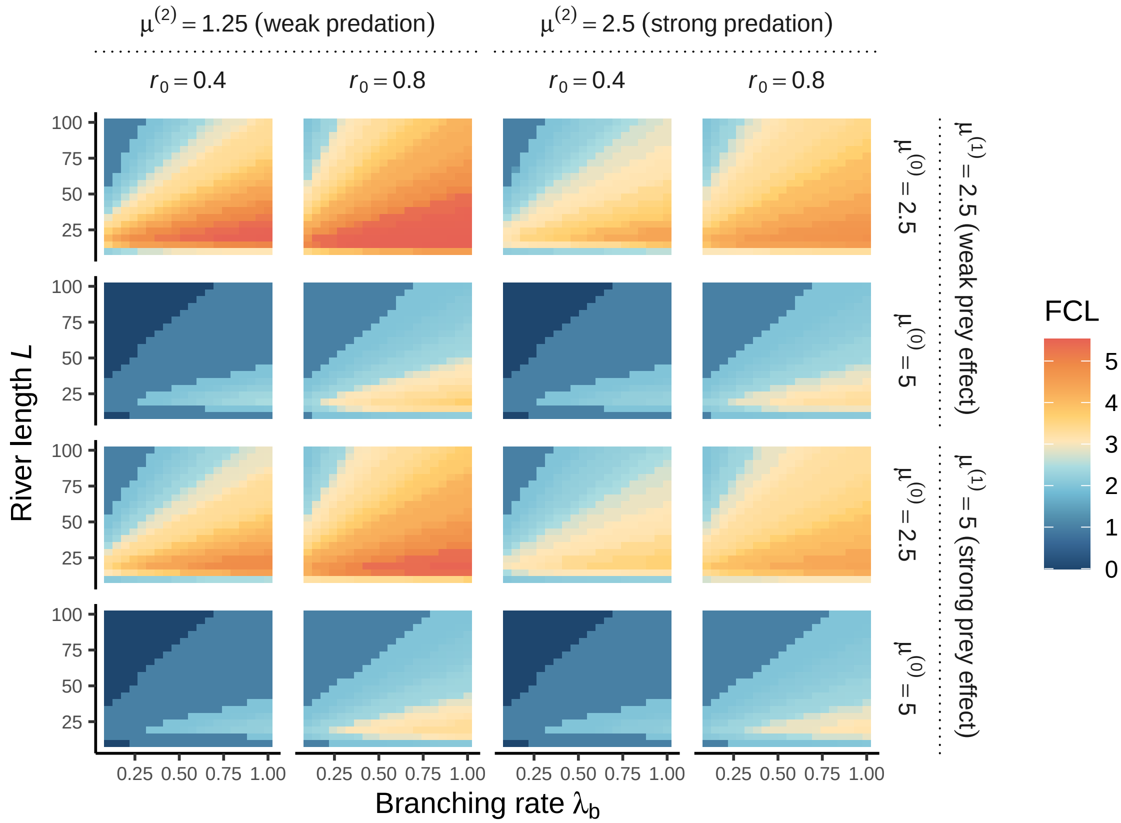

Figure 5: Numerical prediction with low propagule $g_0 = 75$, low synchrony $\rho = 0.25$, and strong omnivory $\theta = 0.5$.Heatmaps of FCL are expressed as a function of ecosystem size (river length, L) and complexity (branching rate, λ_b), with rows and columns displaying different combinations of resource supply (r_0), disturbance regime ($\mu^{(0)}$), prey effect ($\mu^{(1)}$), and predation effect ($\mu^{(2)}$). Each cell represents the average FCL of five food webs. Additional parameter values are: habitat density $h = 2.5$, dispersal capability $\delta_0 = 0.5$, and scaling exponent $\psi = 0.5$.

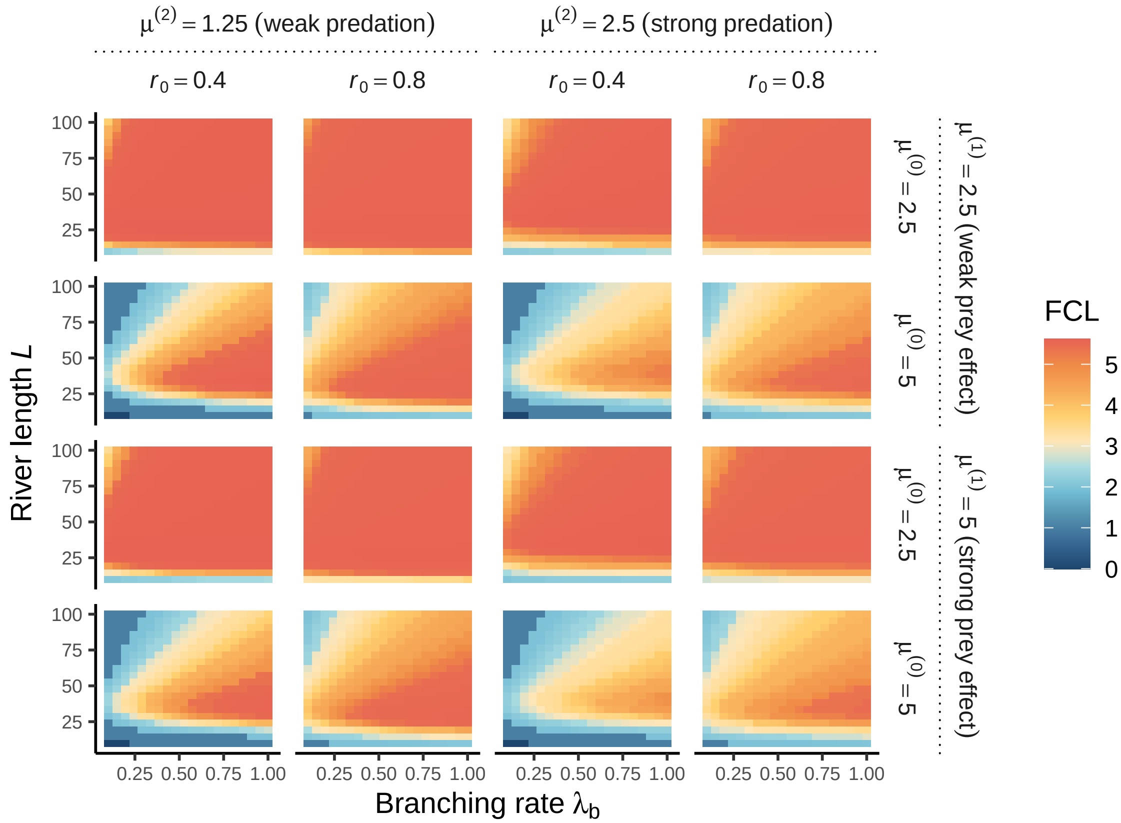

Figure 6: Numerical prediction with high propagule $g_0 = 150$, low synchrony $\rho = 0.25$, and strong omnivory $\theta = 0.5$.Heatmaps of FCL are expressed as a function of ecosystem size (river length, L) and complexity (branching rate, λ_b), with rows and columns displaying different combinations of resource supply (r_0), disturbance regime ($\mu^{(0)}$), prey effect ($\mu^{(1)}$), and predation effect ($\mu^{(2)}$). Each cell represents the average FCL of five food webs. Additional parameter values are: habitat density $h = 2.5$, dispersal capability $\delta_0 = 0.5$, and scaling exponent $\psi = 0.5$.

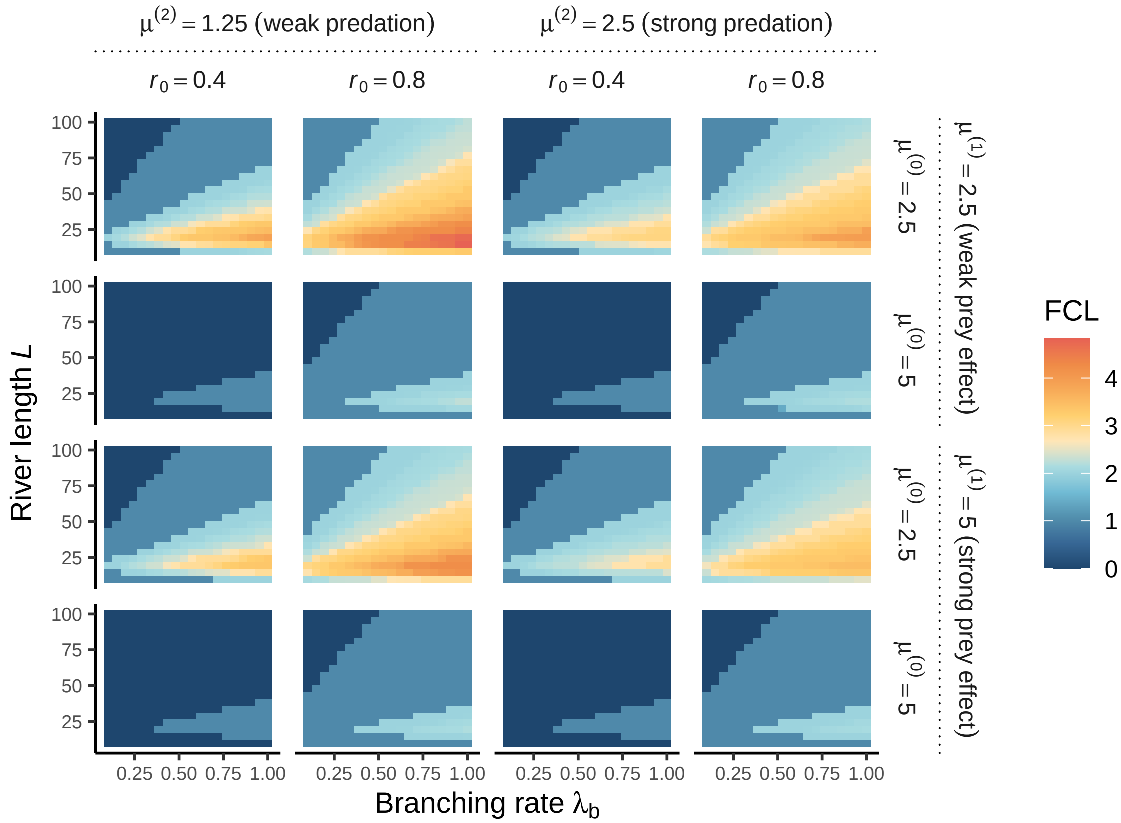

Figure 7: Numerical prediction with low propagule $g_0 = 75$, high synchrony $\rho = 0.5$, and strong omnivory $\theta = 0.5$.Heatmaps of FCL are expressed as a function of ecosystem size (river length, L) and complexity (branching rate, λ_b), with rows and columns displaying different combinations of resource supply (r_0), disturbance regime ($\mu^{(0)}$), prey effect ($\mu^{(1)}$), and predation effect ($\mu^{(2)}$). Each cell represents the average FCL of five food webs. Additional parameter values are: habitat density $h = 2.5$, dispersal capability $\delta_0 = 0.5$, and scaling exponent $\psi = 0.5$.

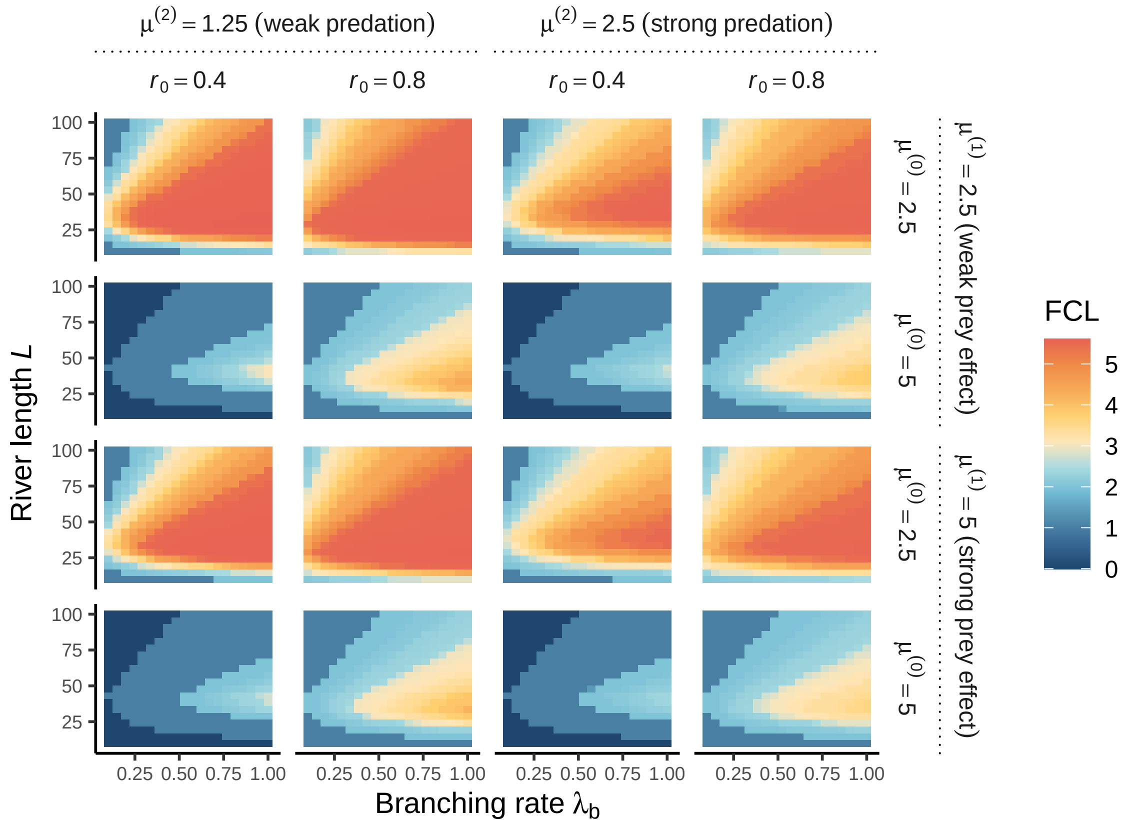

Figure 8: Numerical prediction with high propagule $g_0 = 150$, high synchrony $\rho = 0.5$, and strong omnivory $\theta = 0.5$.Heatmaps of FCL are expressed as a function of ecosystem size (river length, L) and complexity (branching rate, λ_b), with rows and columns displaying different combinations of resource supply (r_0), disturbance regime ($\mu^{(0)}$), prey effect ($\mu^{(1)}$), and predation effect ($\mu^{(2)}$). Each cell represents the average FCL of five food webs. Additional parameter values are: habitat density $h = 2.5$, dispersal capability $\delta_0 = 0.5$, and scaling exponent $\psi = 0.5$.