**APPENDIX1.** Analytical solution of the model.

Taking manufactured goods as the numeraire, the representative household's utility maximization problem is

$$\max_{y,c,h} u(y,c,h) \quad \text{subject to} \quad \omega = y + p_x\, c + p_w\, h \ , \tag{A.1}$$

where $p_x$ and $p_w$ are the market prices of fish and timber, respectively. With utility function (1), this leads to Marshallian demand functions for fish and timber:

$$c(p_x, p_w, \omega) = \alpha\, \omega\, \frac{p_x^{-\sigma}}{p_x^{1-\sigma} + p_w^{1-\sigma}} \quad \text{and} \tag{A.2}$$

$$h(p_x, p_w, \omega) = \alpha\, \omega\, \frac{p_w^{-\sigma}}{p_x^{1-\sigma} + p_w^{1-\sigma}} \ . \tag{A.3}$$

Profits of representative firms harvesting fish and timber are given by

$$\pi_x = p_x\, c^{\text{prod}} - \omega\, e_x = (p_x\, \nu_x\, x - \omega)\ e_x \qquad \text{and} \tag{A.4}$$

$$\pi_w = p_w\, h^{\text{prod}} - \omega\, e_w = (p_w\, \nu_w\, w - \omega)\ e_w \ , \tag{A.5}$$

where production functions (6) and (7) have been employed in the second equality. In open-access equilibrium, which is characterized by zero profits, i.e. $\pi_x = 0$ and $\pi_w = 0$ for all firms, we thus have the following relationships between equilibrium market prices and resource stocks of fish and wood:

$$p_x = \frac{\omega}{\nu_x}\, x^{-1} \quad \text{and} \tag{A.6}$$

$$p_w = \frac{\omega}{\nu_w}\, w^{-1} \ . \tag{A.7}$$

Inserting these expressions into demand functions (A.2) and (A.3), we obtain open-access per-capita resource demands of fish and timber as functions of the respective resource stocks:

$$c(x, w) = \alpha\, \frac{(\nu_x\, x)^{\sigma}}{(\nu_x\, x)^{\sigma-1} + (\nu_w\, w)^{\sigma-1}} \quad \text{and} \tag{A.8}$$

$$h(x, w) = \alpha\, \frac{(\nu_w\, w)^{\sigma}}{(\nu_x\, x)^{\sigma-1} + (\nu_w\, w)^{\sigma-1}} \ . \tag{A.9}$$

General market equilibrium, when aggregate supply equals aggregate demand on the markets for both ecosystem services, is characterized by the conditions

$$C = m_x \, c^{\text{prod}} = nc(x,w) \quad \text{and} \tag{A.10}$$

$$H = m_w \, h^{\text{prod}} = nh(x,w) \ . \tag{A.11}$$

Inserting these market-clearing-conditions into equations (2) and (3) yields the following system of coupled differential equations that characterize the dynamics of the ecological-economic system in the general market equilibrium:

$$\frac{dx}{dt} = f(x,w) - nc(x,w) \quad \text{and} \tag{A.12}$$

$$\frac{dw}{dt} = g(w,x) - nh(x,w) \ , \tag{A.13}$$

where $f(x,w)$ and $g(w,x)$ are given by Equations (4) and (5), and $c(x,w)$ and $h(x,w)$ are given by Equations (A.8) and (A.9). The phase diagrams in the main text graphically display the dynamics in state space determined by the system of Equations (A.12) and (A.13).