Original Eq:

$$v' = 0.04v^2 + 5v + 140 - u + I \quad (1)$$
$$u' = a(bv - u) \quad (2)$$

New normalized units, in terms of min value m and range r:

$$g = \frac{1}{r}(v - m) \quad (3)$$
$$v = rg + m \quad (4)$$
$$h = \frac{1}{r}u \quad (5)$$
$$u = rh \quad (6)$$

And derivatives:

$$g' = \frac{1}{r}v' \quad (7)$$
$$v' = rg' \quad (8)$$
$$h' = \frac{1}{r}u' \quad (9)$$
$$u' = rh' \quad (10)$$
$$(11)$$

Make the substitution and start manipulating:

$$rg' = 0.04(rg + m)^2 + 5(rg + m) + 140 - rh + I \quad (12)$$
$$rg' = 0.04(r^2g^2 + 2rgm + m^2) + 5rg + 5m + 140 - rh + I \quad (13)$$
$$g' = 0.04rg^2 + 0.04(2gm) + \frac{1}{r}0.04m^2 + 5g + \frac{1}{r}5m + \frac{1}{r}140 - h + I \quad (14)$$
$$g' = 0.04rg^2 + (0.08m + 5)g + \frac{1}{r}(m(0.04m + 5) + 140) - h + I \quad (15)$$

Final result:

$$g' = \alpha g^2 + \beta g + \gamma - h + I \quad (16)$$
$$\alpha = 0.04r \quad (17)$$
$$\beta = 0.08m + 5 \quad (18)$$
$$\gamma = \frac{1}{r}(m(0.04m + 5) + 140) \quad (19)$$

And for the recovery variable:

$$rh' = a(b(rg + m) - rh) \quad (20)$$
$$rh' = abrg + abm - arh \quad (21)$$
$$h' = abg + \frac{1}{r}abm - ah \quad (22)$$
$$h' = ab(g + \frac{1}{r}m) - ah \quad (23)$$
$$h' = a(b(g + \frac{1}{r}m) - h) \quad (24)$$
$$h' = a(bg + \frac{1}{r}mb - h) \quad (25)$$