Equations used for the four ES types maps processing

- Habitat Quality Equation:

$$Q_{xj} = H_j * (1 - ((D_{xj}^{z})/(D_{xj}^{z} - k_z))), \quad (3)$$

where Q_{xj} is the habitat quality in grid cell x with land-use/land-cover (LULC) type j, H_j indicates the habitat suitability of LULC type j, D_{xj} is the total threat level in grid cell x, with LULC or habitat type j, and k constant is the half-saturation constant (by default it is equal to 0.5).

- Recreation linear regression:

$$y_i = \beta_0 \beta_1 x_{i1} .. \beta_p x_{ip} \text{ for } i=1..n, \quad (4)$$

where $\beta_{0,1,2...n}$ are coefficients of the regression, x_{ip} is the coverage of each attribute in each cell or polygon (hereafter called 'cell') i, within an area of interest containing n cells. Study period used were: 2016 as pre-fire analysis and 2017 as post-fire analysis.

- Pollination Equation:

$$YW(f) = \nu(f) (\sum x \in X(f) PYW(x) / |X(f)|), \quad (5)$$

where YW(f) is the percentage of total crop yield attributable to wild pollinators, X(f) is the set of pixels covering farm "f", and |X(f)| is the count of pixels covered by farm "f", ν(f) is a scalar function ∈[0,1] which represents the percentage of crop yield grown on farm "f", and PYW(x) is the percentage of pollinator-dependent yield attributable to wild pollinators.

- Revised universal soil loss equation:

$$RUSLEi = R_i \cdot K_i \cdot LS_i \cdot C_i \cdot P_i, \quad (6)$$

where R_i is rainfall erosivity, K_i is soil erodibility, LS_i is a slope length-gradient factor, C_i is a crop-management factor, and and P_i is a support practice factor.