$$
\begin{aligned}
[\boldsymbol{\beta}, \mathbf{z}, p|\mathbf{y}] \quad \propto & \\
& \prod_{i=1}^{N} \text{binomial}\left(y_i|p \cdot z_i, n_i\right) \times \\
& \text{Bernoulli}(z_i|\text{invlogit}(\beta_0 + \beta_1 elev_i + \beta_2 {elev_i}^2 + \beta_3 forest_i)) \times \\
& \text{normal}\left(\beta_0|0, 2.25\right) \text{normal}\left(\beta_1|0, 2.25\right) \times \\
& \text{normal}\left(\beta_2|0, 2.25\right) \text{normal}(\beta_3|0, 2.25) \text{beta}\left(p|1, 1\right)
\end{aligned}
$$