

Route  $s=1,\dots,S$

Level 1  
ecoregion

Route  
features

$h^{(L_1)}$

Concatenate

$h^{(1)}$

$h^{(2)}$

$h^{(3)}$

GRU

$h^{(\psi_1)}$

$h^{(\phi)}$

$h^{(\gamma)}$

$h^{(p)}$

Survey  
features

$\psi_1$

$\phi$

$\gamma$

$p$

Year  $t=1,\dots,T$

$w^{(\psi_1)}$

$w^{(\phi)}$

$w^{(\gamma)}$

$w^{(p)}$

$h^{(\psi_1^*)}$

$h^{(\phi^*)}$

$h^{(\gamma^*)}$

$h^{(p^*)}$

Concatenate

$h^{(j)}$

$h^{(g_j)}$

$h^{(f_j)}$

$h^{(o_j)}$

Species

Genus

Family

Order

Species  $j=1,\dots,J$