**S19 Table. Changes in Páramo cloud immersion and frost for RCP 8.5, years 2061-2080.**

In a worst-case scenario, 98% of Neotropical páramo zone area, including 100% of the páramo zone in Mesoamerica and the entire Andean Cordillera Oriental of Colombia and Venezuela, will experience declines in cloud immersion, frost, or both as early as around 2060 (2061-2080, average year 2070). These páramo habitats will dry or be subject to tree invasion. Cloud immersion or frost changes are given as percent of total zone area by change categorya.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ecoregion | UPR, PR, or All | Páramo Zone Area (km2) | RHd < 0%and Frost < Frostmin2(%) | RHd < 0%(%) | Frost < Frostmin2(%) | Frost < Frostmin2 and MSDF Zoneb(%) | Total Affected(%) | RHd ≥ 0%Remaining(%) |
| Talamanca | UPR |  6.8  | 100 | - | - | - |  100  | - |
| Talamanca | PR |  111  | 100 | - | - | - |  100  | - |
| Santa Marta | UPR |  63.7  | 100 | - | - | - |  100  | - |
| Santa Marta | PR |  1,322  | 48 | 52 | - | - |  100  | - |
| Merida | UPR |  709  | 98 | 2.4 | - | - |  100  |  |
| Merida | PR |  1,620  | 92 | 8.4 | - | - |  100  | - |
| N Oriental 1 | UPR |  3,655  | 94 | 5.6 | - | - |  100  | - |
| N Oriental 1 | PR |  2,613  | 73 | 27 | - | - |  100  | - |
| N Central/Occid | UPR |  1,660  | 70 | 0 | 30 | - |  100  | - |
| N Central/Occid | PR |  2,082  | 66 | 2.5 | 23 | - |  92  | 8.7 |
| N Oriental 2 | UPR |  765  | 100 | - | 0 | - |  100  | - |
| N Oriental 2 | PR |  1,663  | 100 | - | 0 | - |  100  | - |
| Real | UPR |  8,462  | 38 | 2.2 | 59 | - |  99  | 1.2 |
| Real | PR |  5,966  | 60 | 4.9 | 31 | - |  96  | 3.7 |
| Central | UPR |  7,659  | 6.5 | 0 | 16 | 70 |  93  | 7.9 |
| Central | PR |  1,993  | 15 | 0 | 14 | 69 |  98  | 1.8 |
| South America | UPR |  22,970  | 43 | 1.8 | 29 | 23 |  97  | 3 |
| South America | PR |  17,260  | 64 | 11 | 15 | 8 |  98  | 2.6 |
| Neotropics | UPR |  22,980  | 43 | 1.8 | 29 | 23 |  97  | 3 |
| Neotropics | PR |  17,370  | 64 | 11 | 15 | 7.9 |  98  | 2.5 |
| Santa Marta | Total |  1,386  | 51 | 49 | - | - |  100  | - |
| Merida | Total |  2,329  | 93 | 6.6 | - | - |  100  | - |
| N Oriental 1 | Total |  6,268  | 85 | 15 | - | - |  100  | - |
| N Central/Occid | Total |  3,742  | 68 | 1.4 | 26 | - |  95  | 4.8 |
| N Oriental 2 | Total |  2,428  | 100 | - | 0 | - |  100  | - |
| Real | Total |  14,430  | 47 | 3.3 | 47 | - |  97  | 2.2 |
| Central | Total |  9,653  | 8.3 | 0 | 16 | 69 |  93  | 6.6 |
| Mesoamerica | Total |  118  | 100 | - | - | - |  100  | - |
| South America | Total |  40,230  | 52 | 5.7 | 23 | 17 |  98  | 2.8 |
| Neotropics | Total |  40,350  | 52 | 5.7 | 23 | 17 |  98  | 2.8 |

aChange categories: RHd < 0% and Frost < Frostmin2 = Decline in relative humidity (RH) and frost (d·yr-1) falls below minimum to be páramo (Frostmin2)­­; RHd < 0% = Decline in RH; Frost < Frostmin2 = Frost falls below Frost min2; Frost < Frostmin2 *and* MSDF Zone = Frost falls below Frost min2 and adjacent to montane or subalpine dry forest. bSee Fig 10 legend for Ecoregions. cUPR=Unprotected; PR=Protected; Total=Unprotected + Protected. dPáramo adjacent to montane or subalpine dry forest will likely be invaded by montane dry forest species.