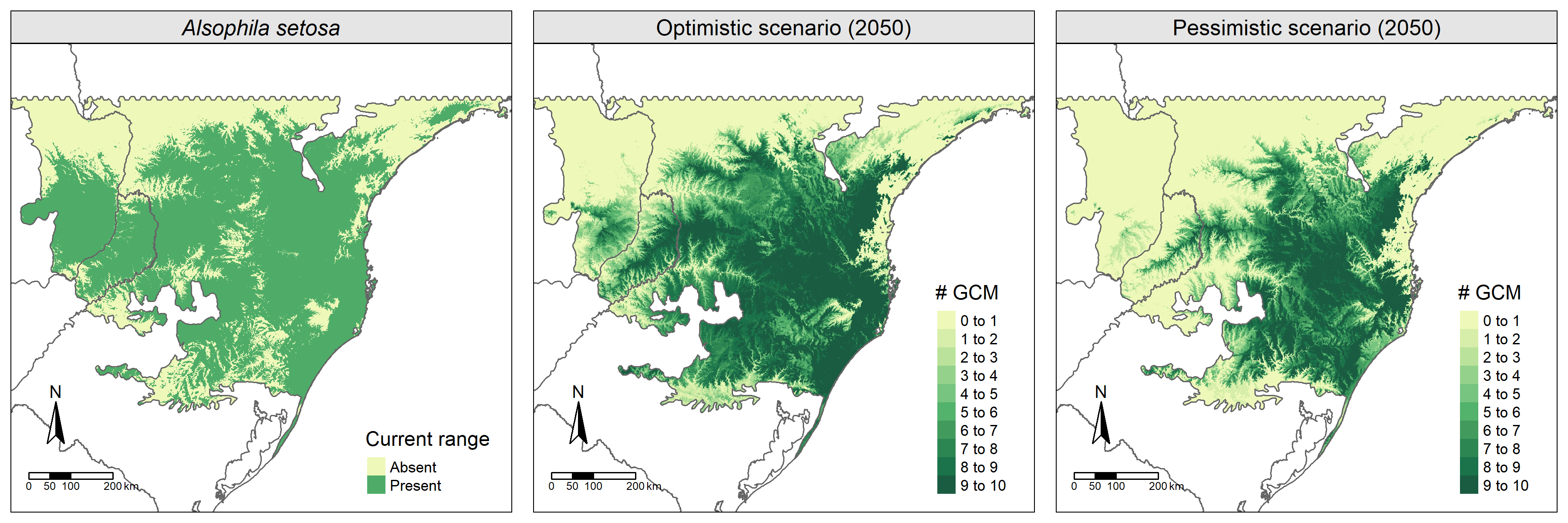
**Supplementary material**



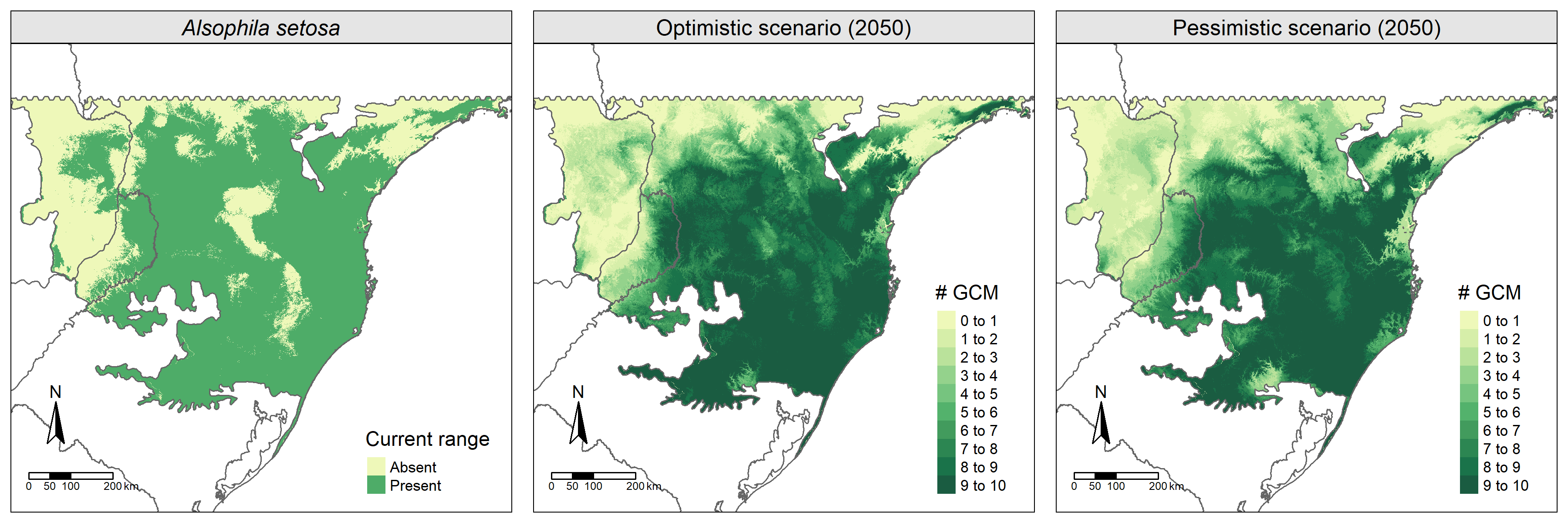
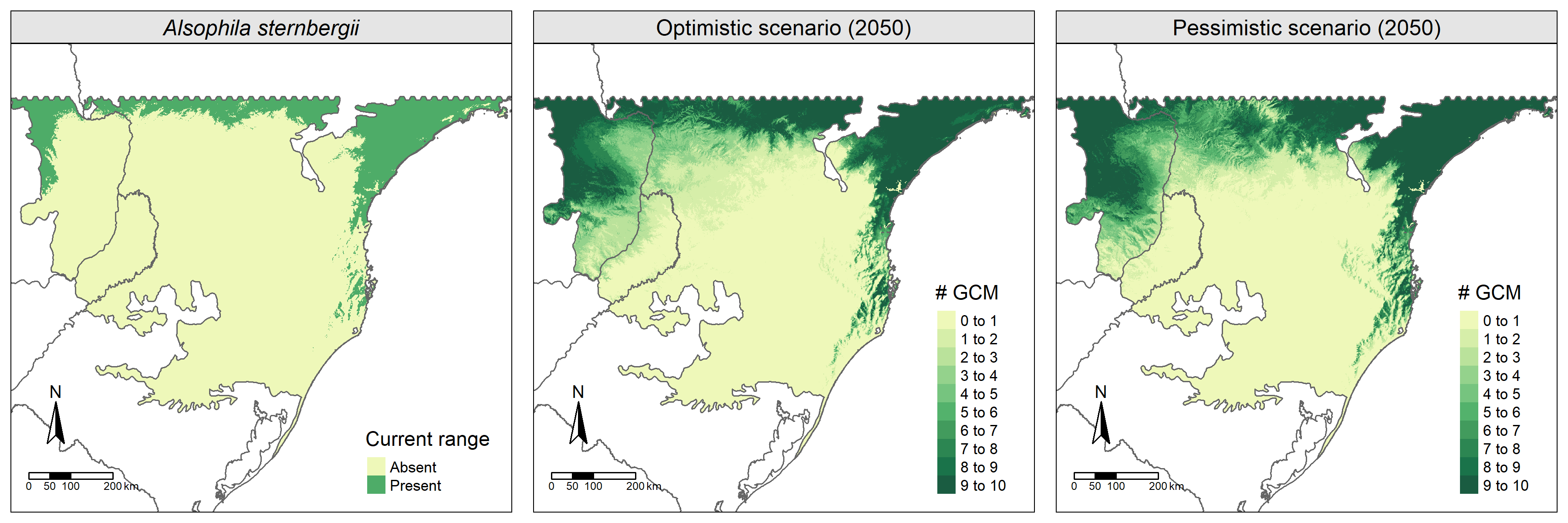
**

Figure S01. *Alsophila setosa* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.



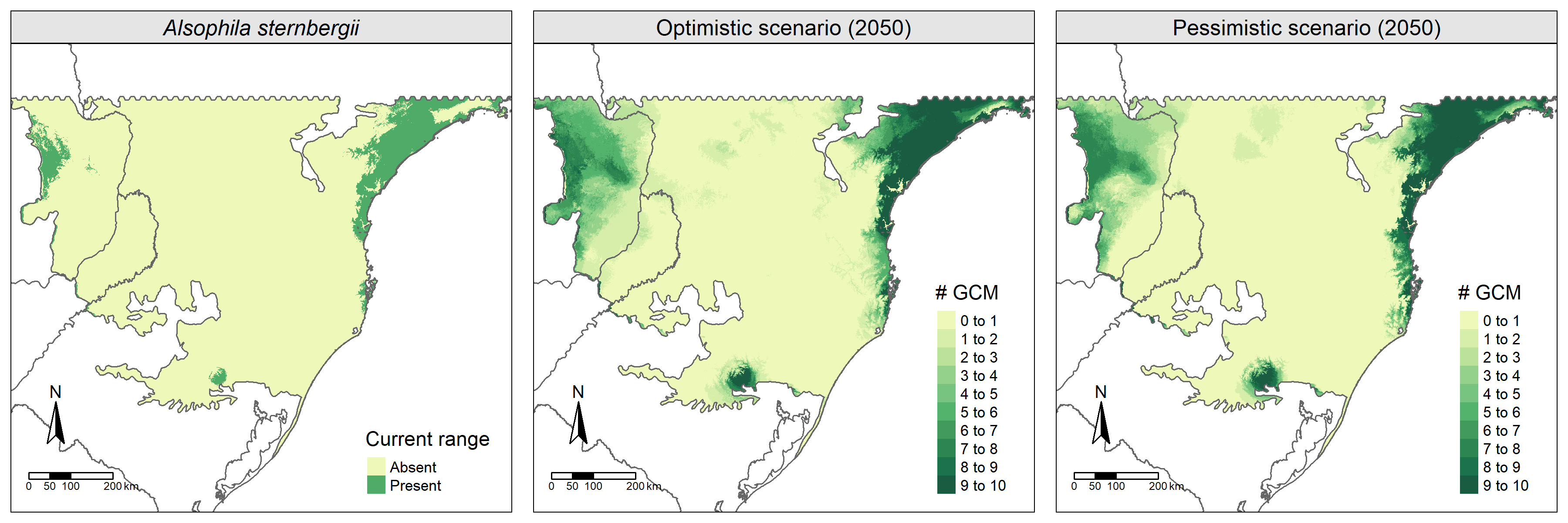
**

Figure S02. *Alsophila sternbergii* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.

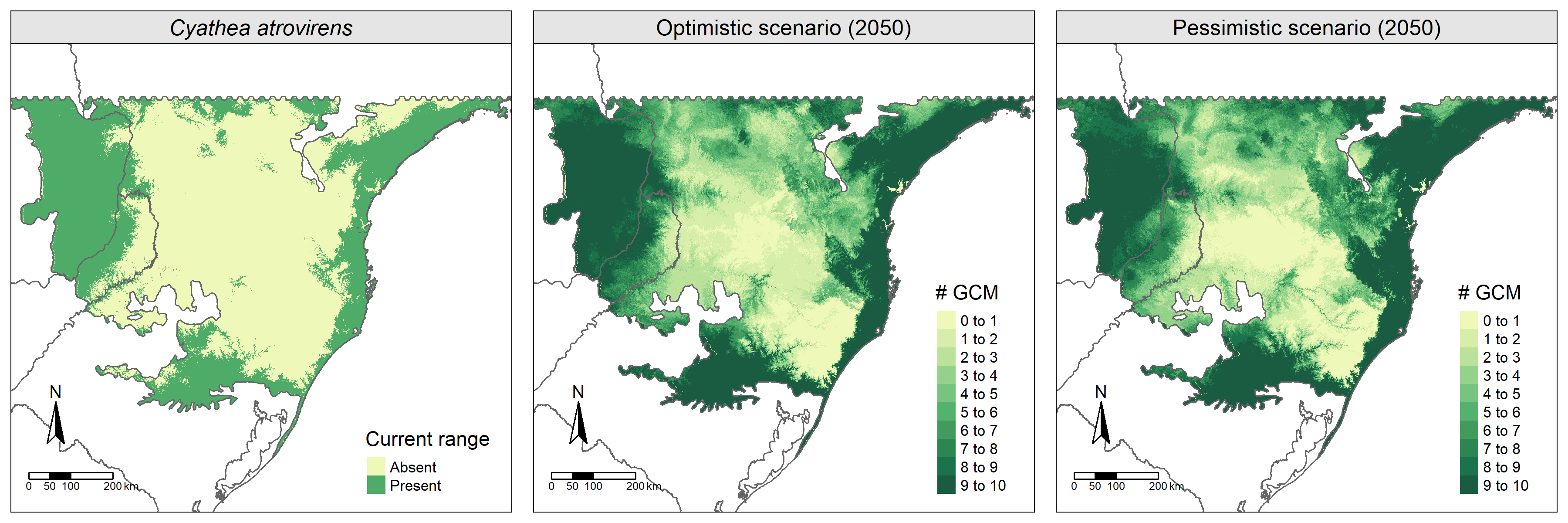
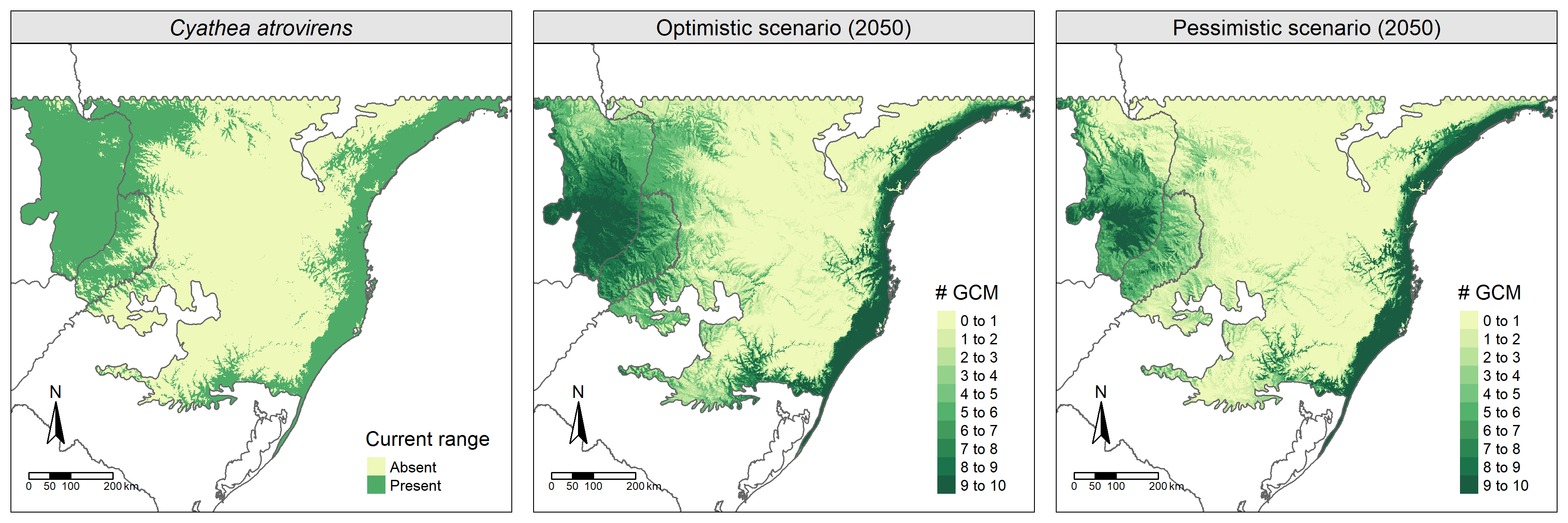


Figure S03. *Cyathea atrovirens* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.



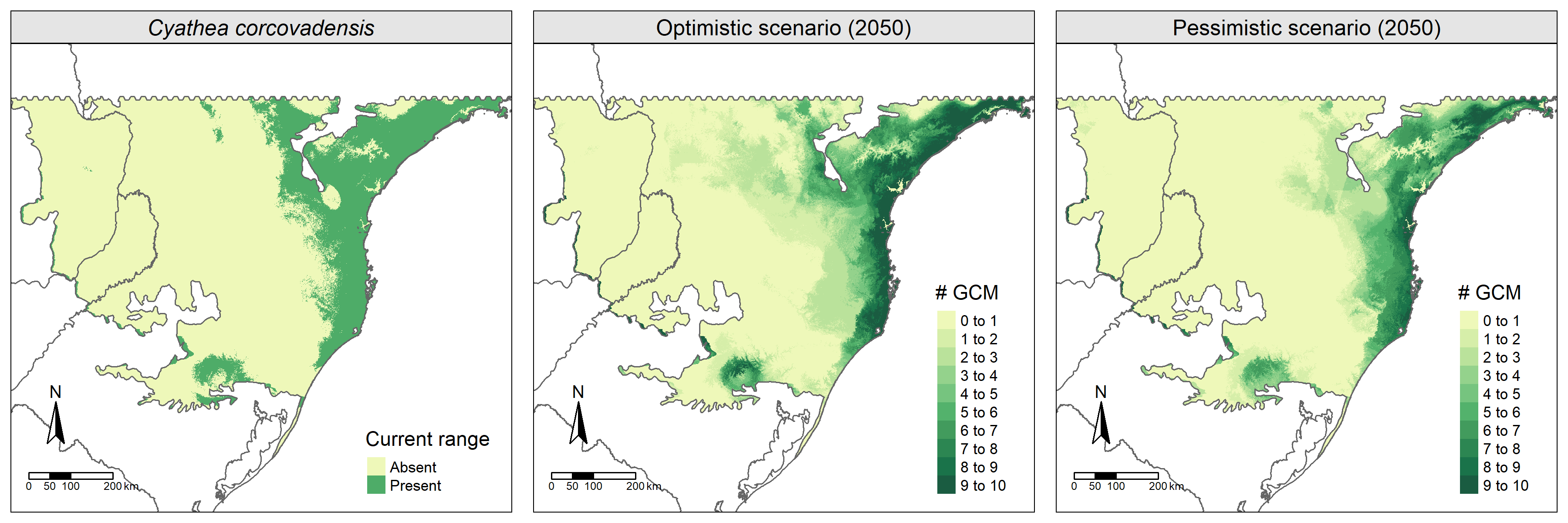
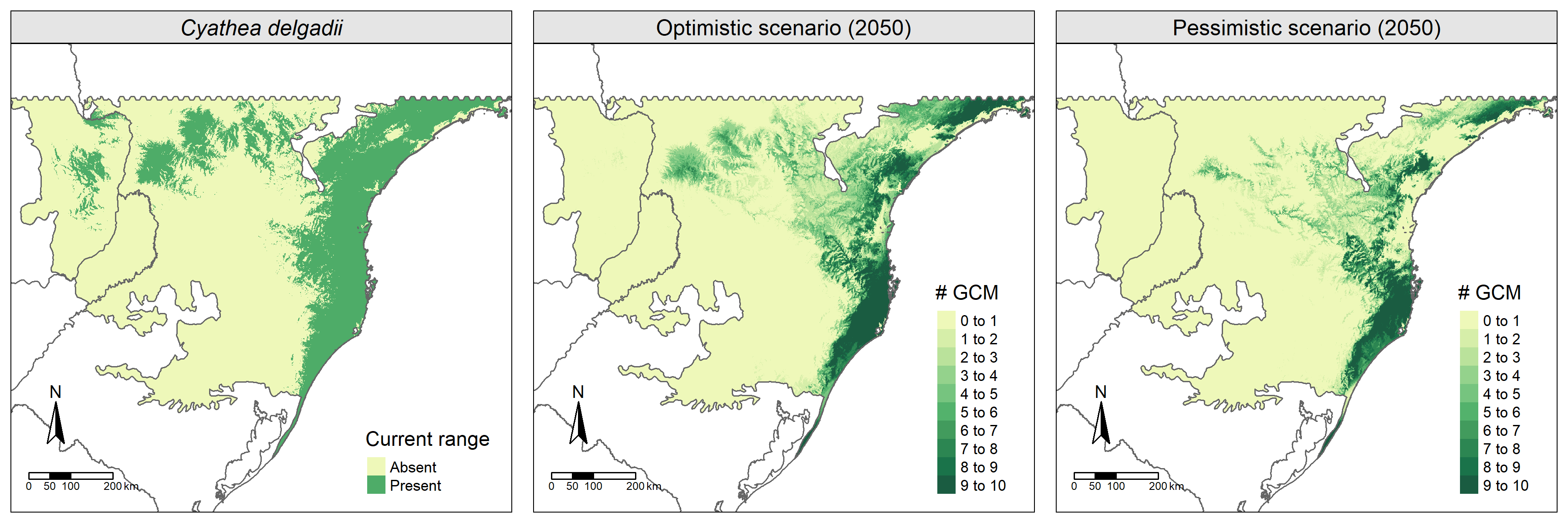
**

Figure S04. *Cyathea corcovadensis* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.



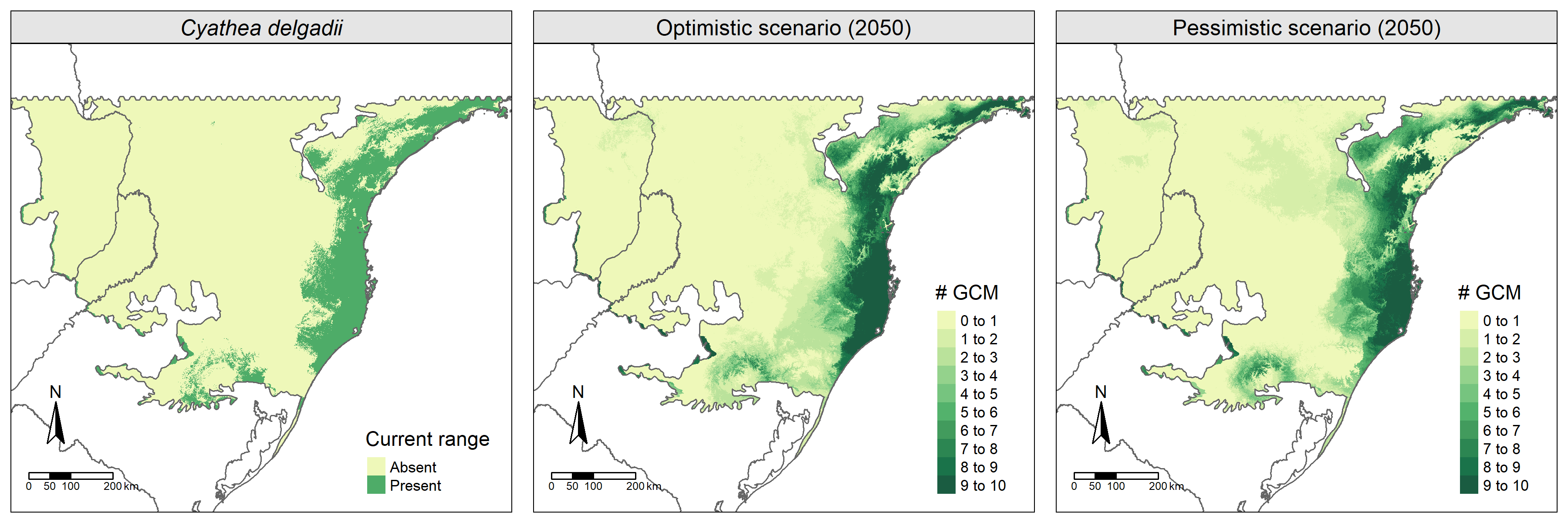
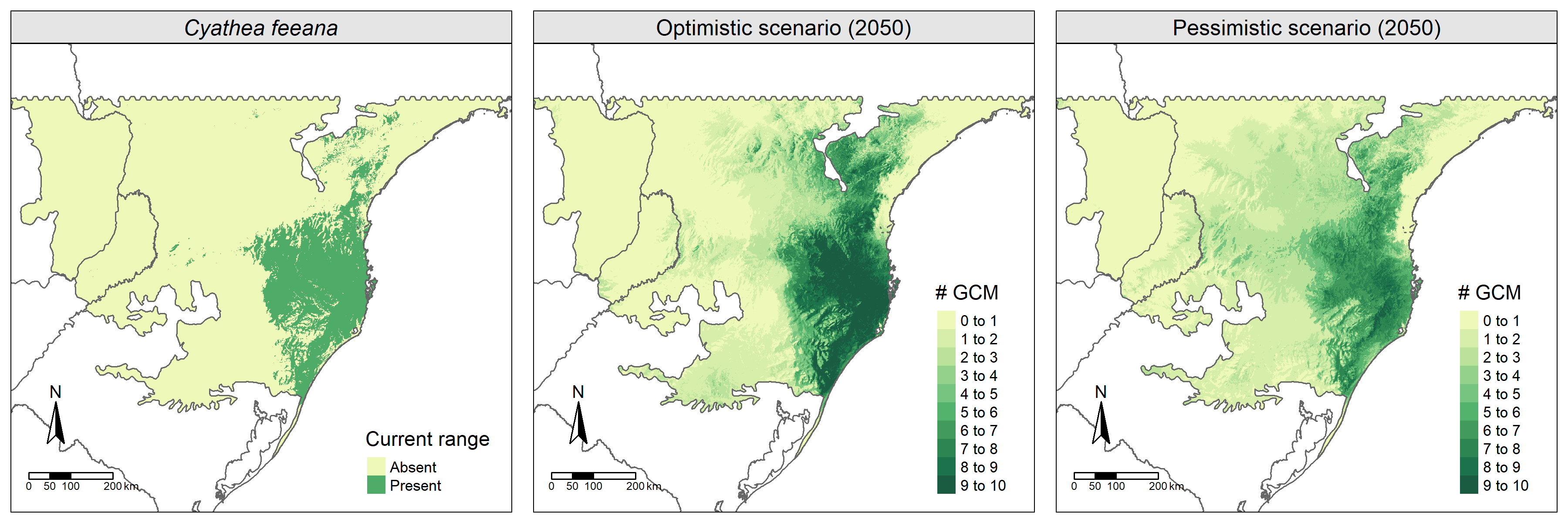
**

Figure S05. *Cyathea delgadii* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.



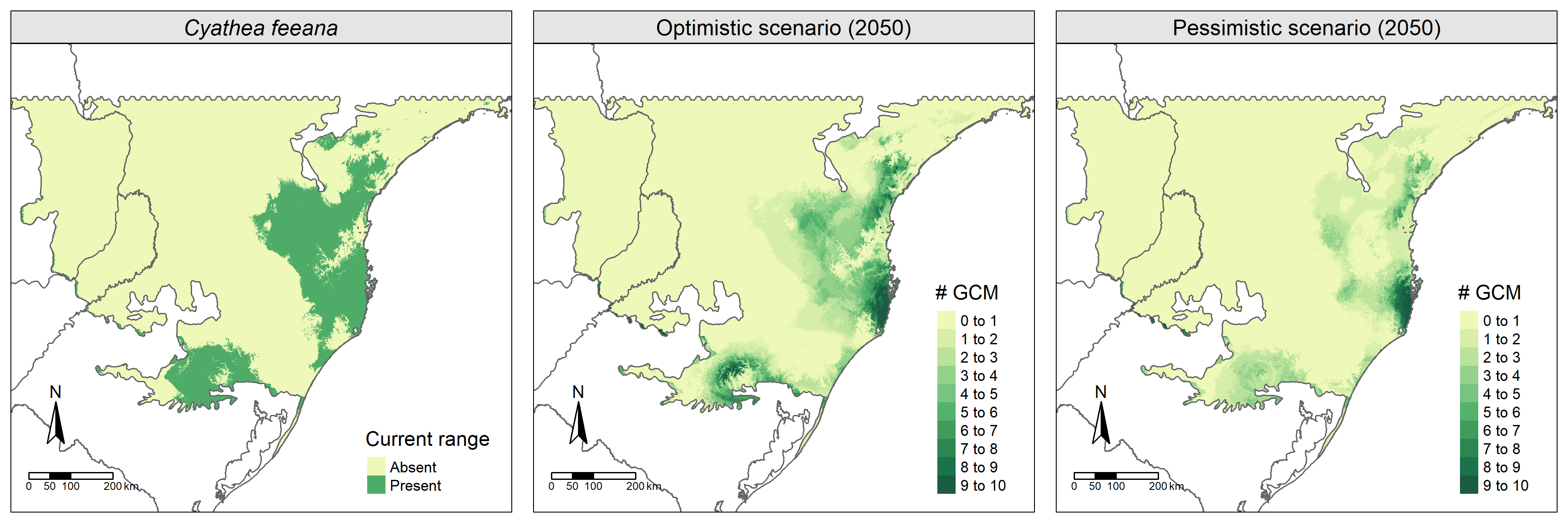
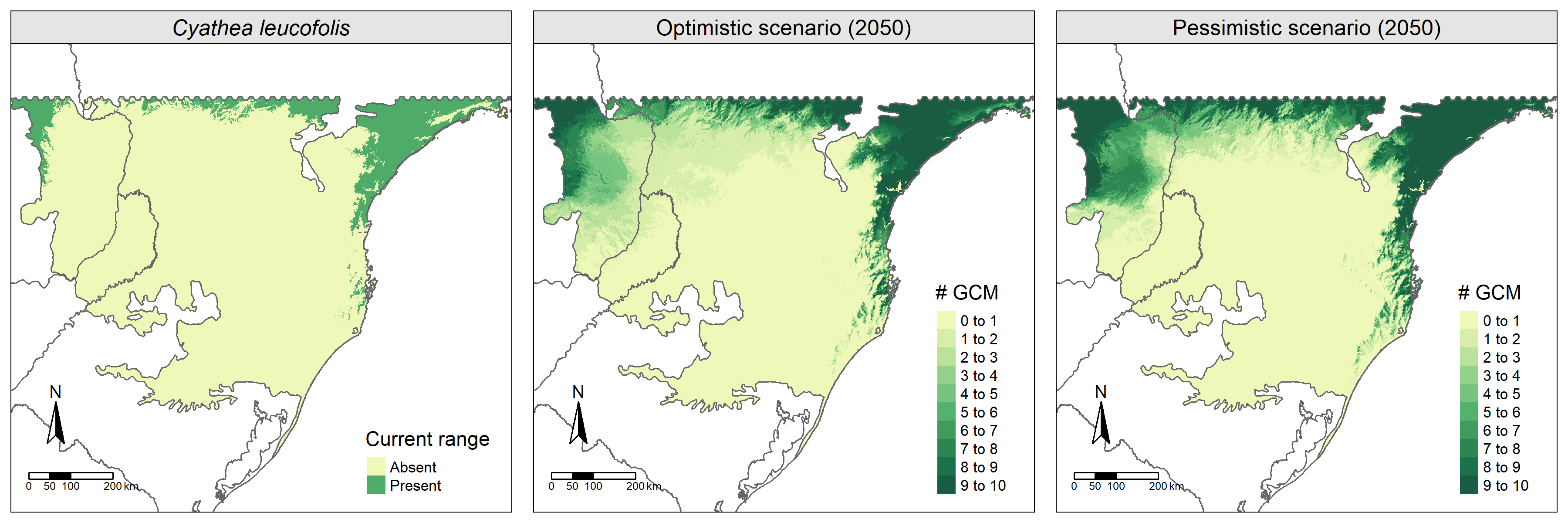
**

Figure S06. *Cyathea feeana* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.

**

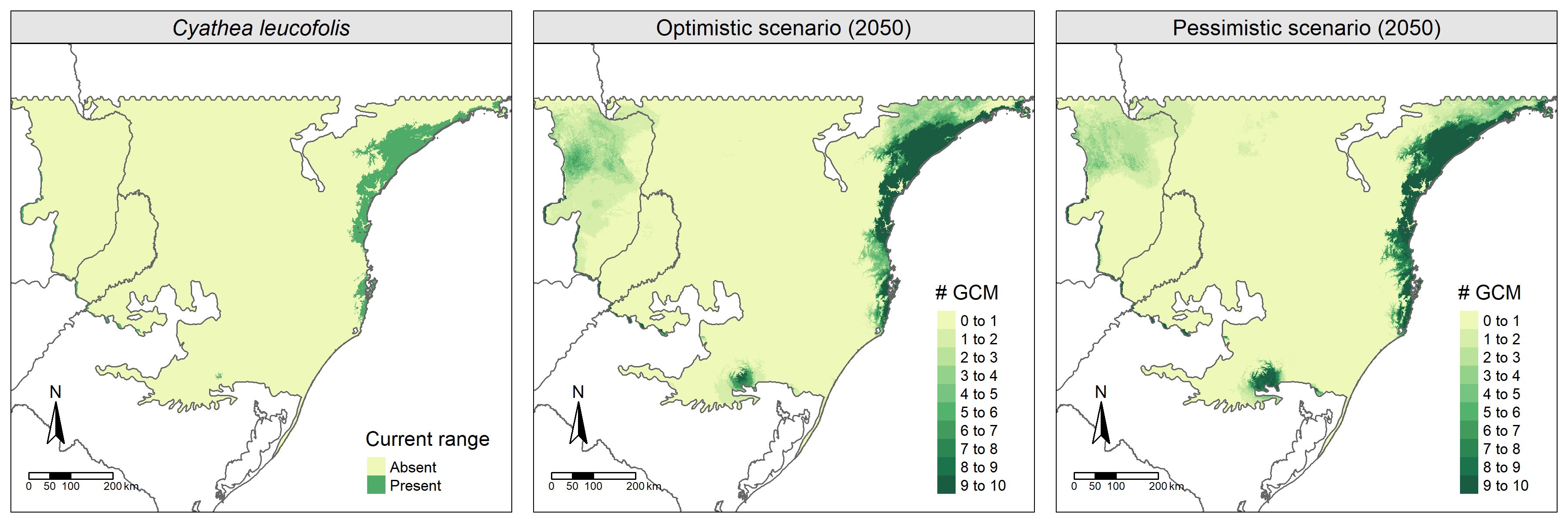
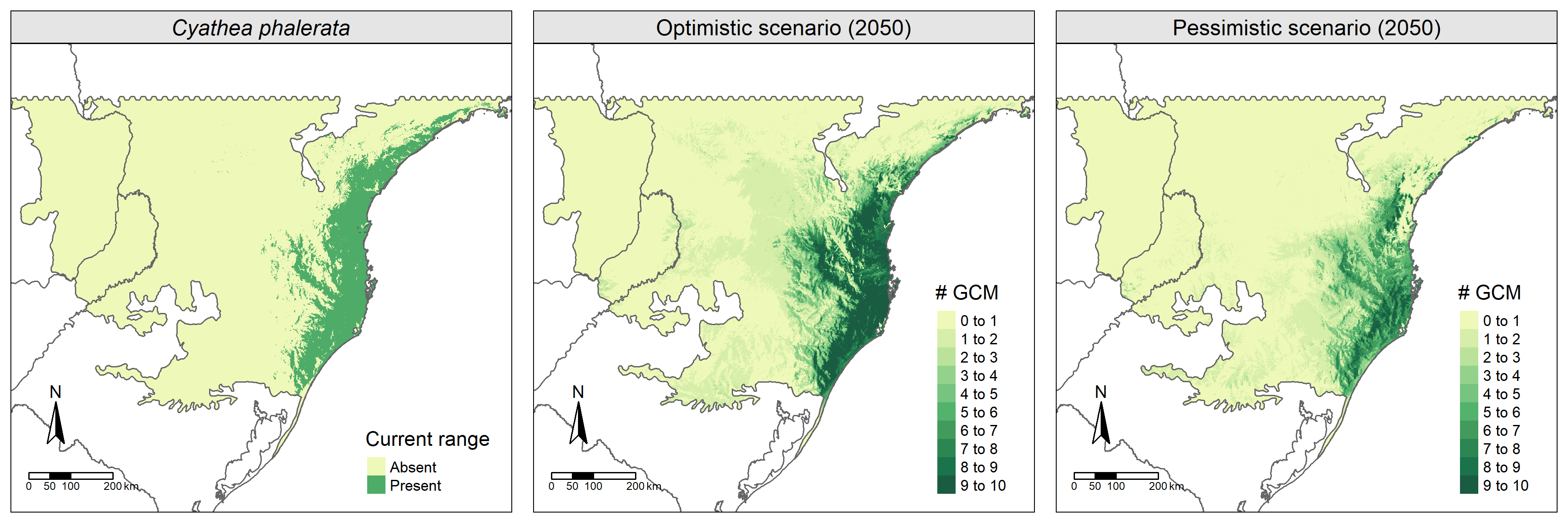
**

Figure S07. *Cyathea leucofolis* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.

**

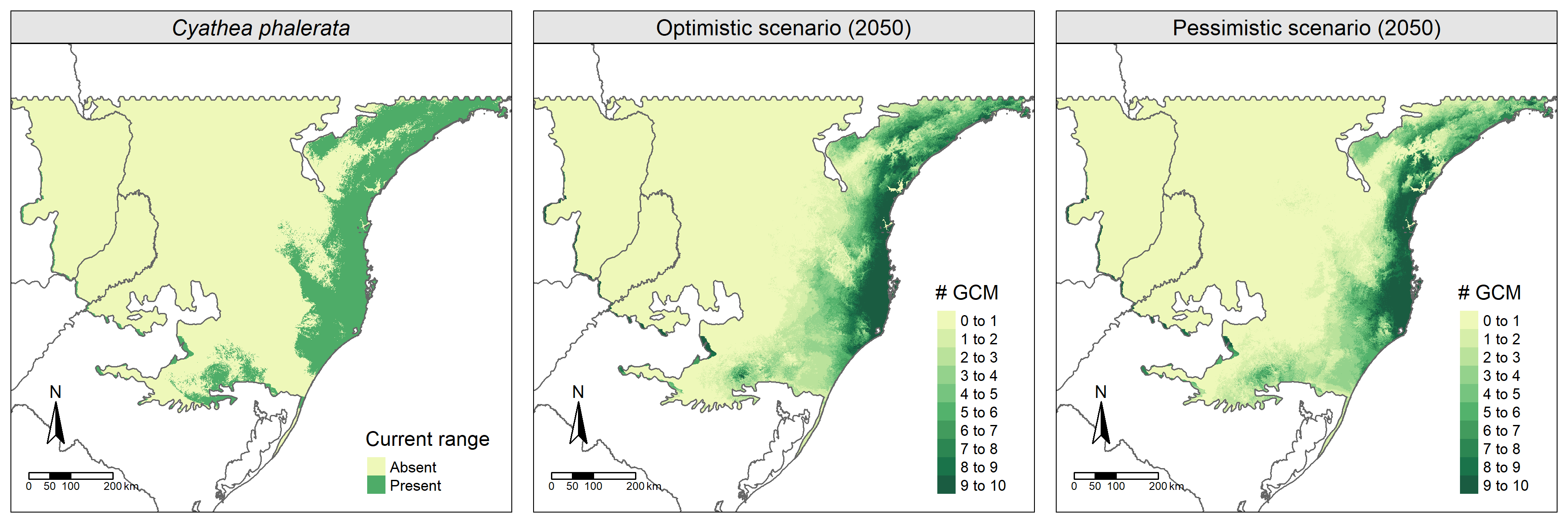
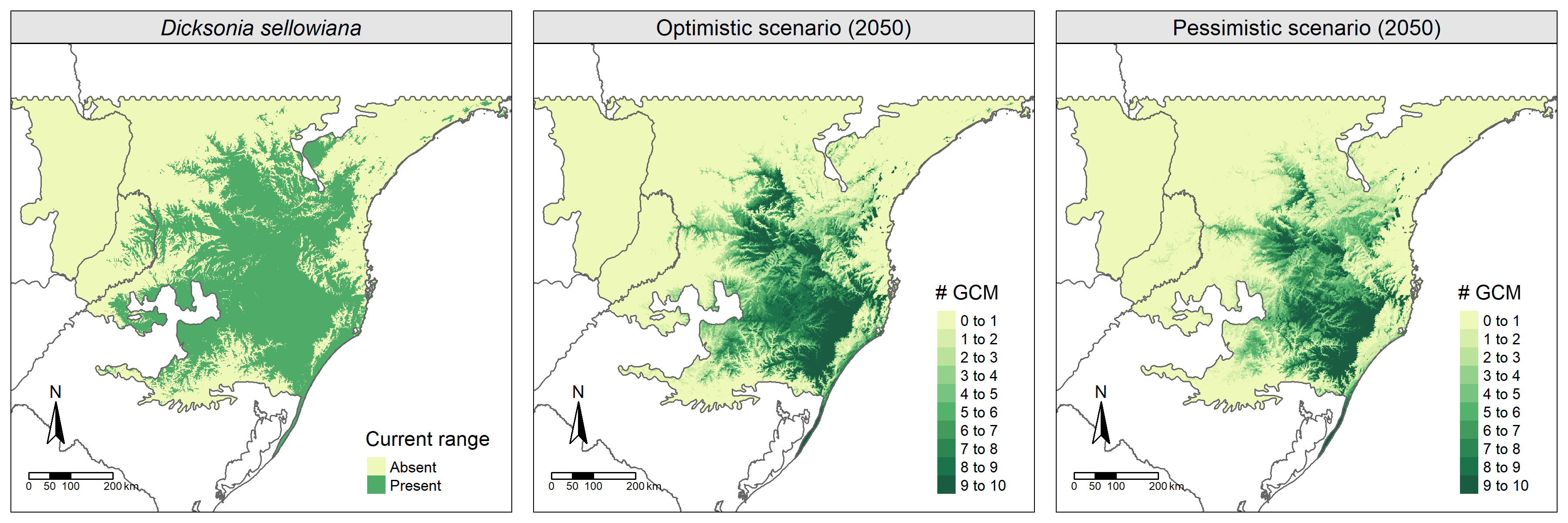
**

Figure S08. *Cyathea phalerata* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.

**

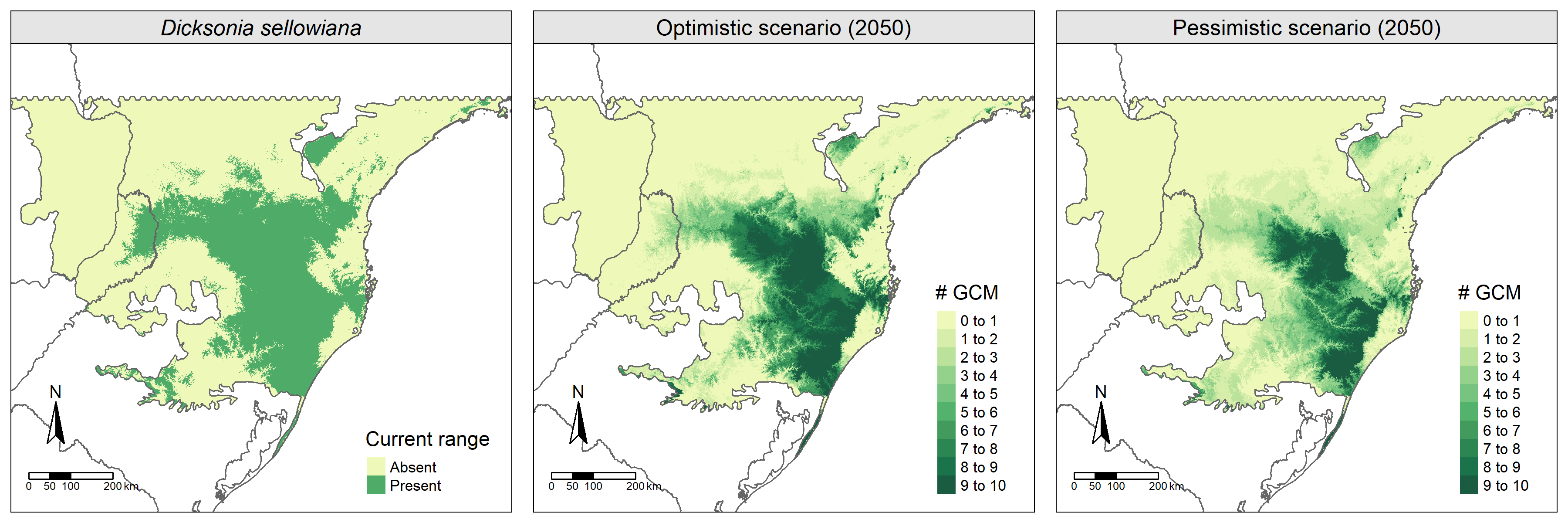
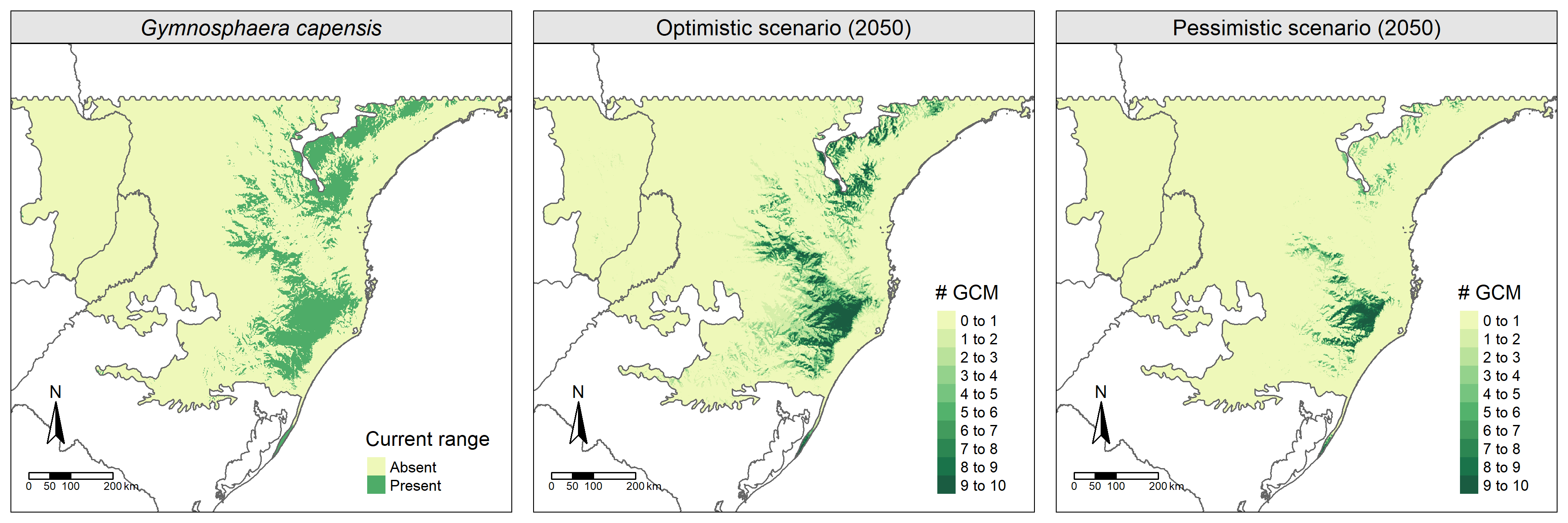
**

Figure S09. *Dicksonia sellowiana* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.

**

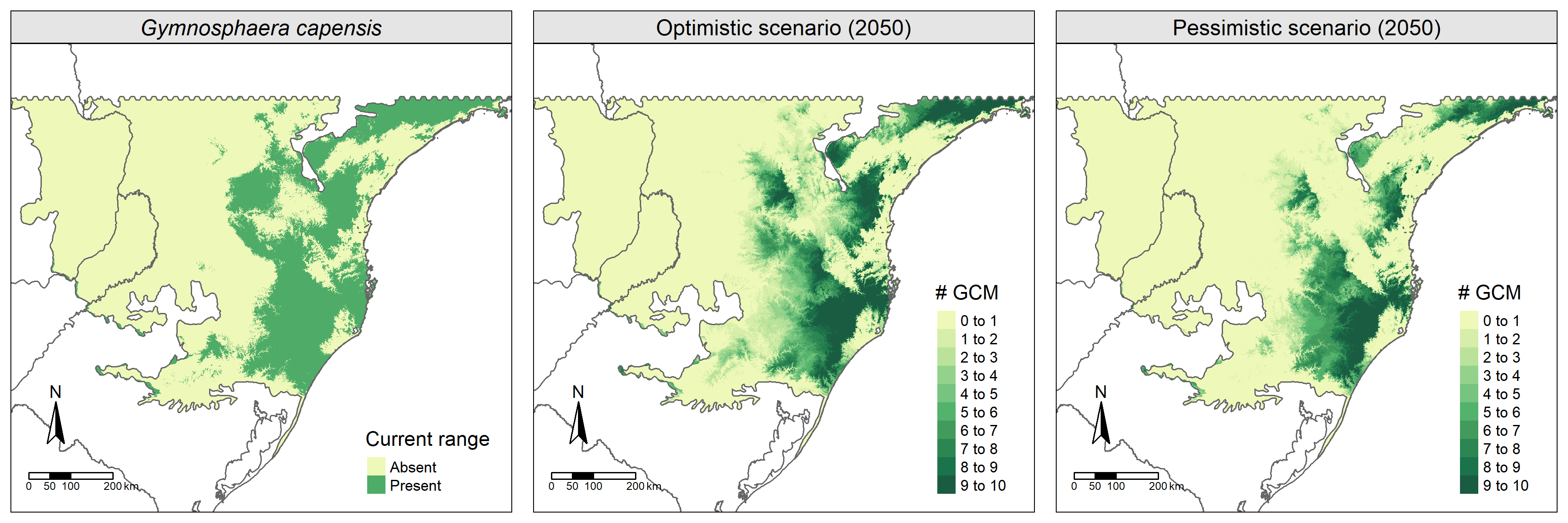
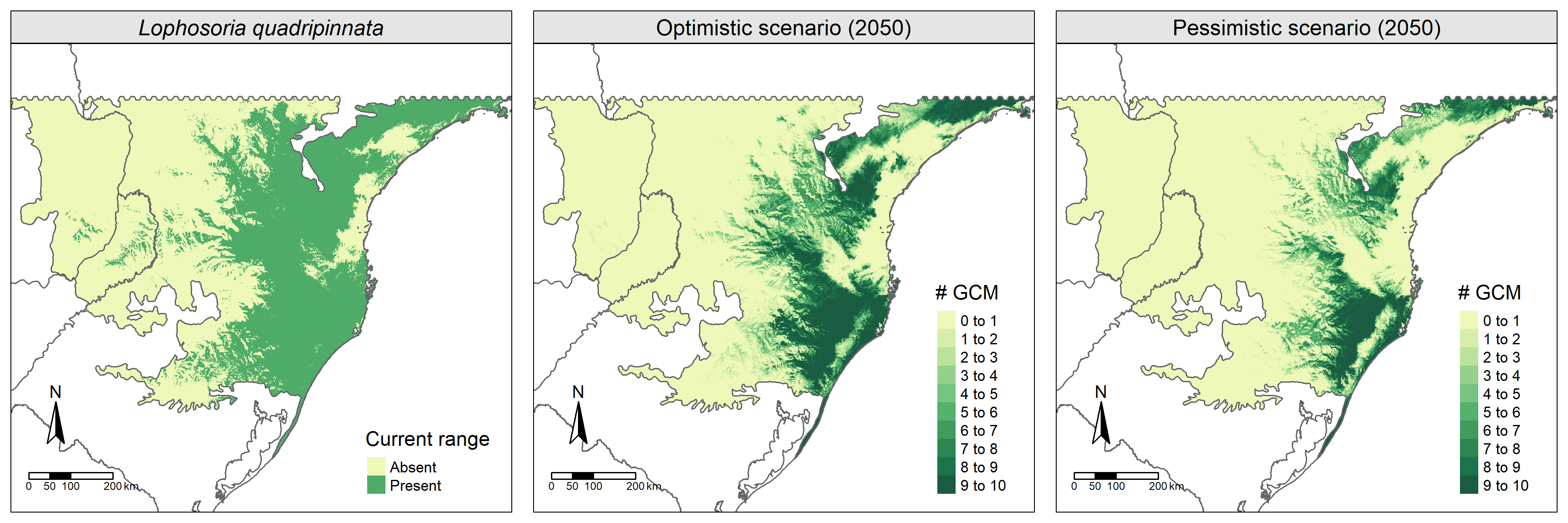
**

Figure S10. *Gymnosphaera capensis* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.

**

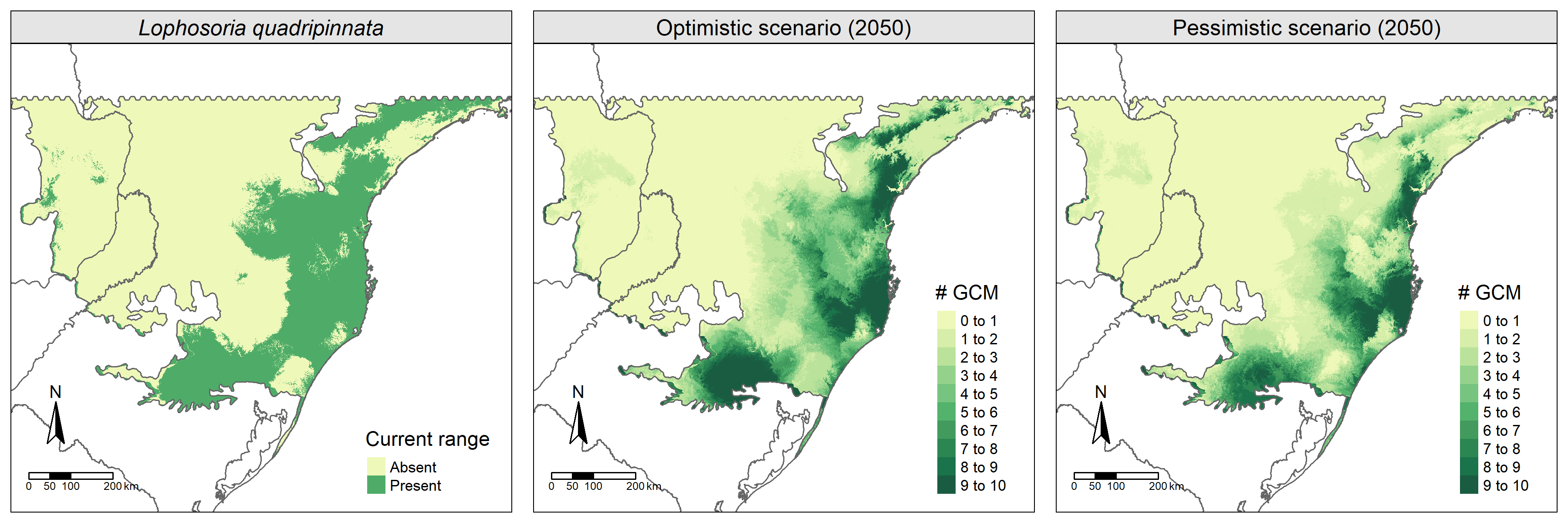
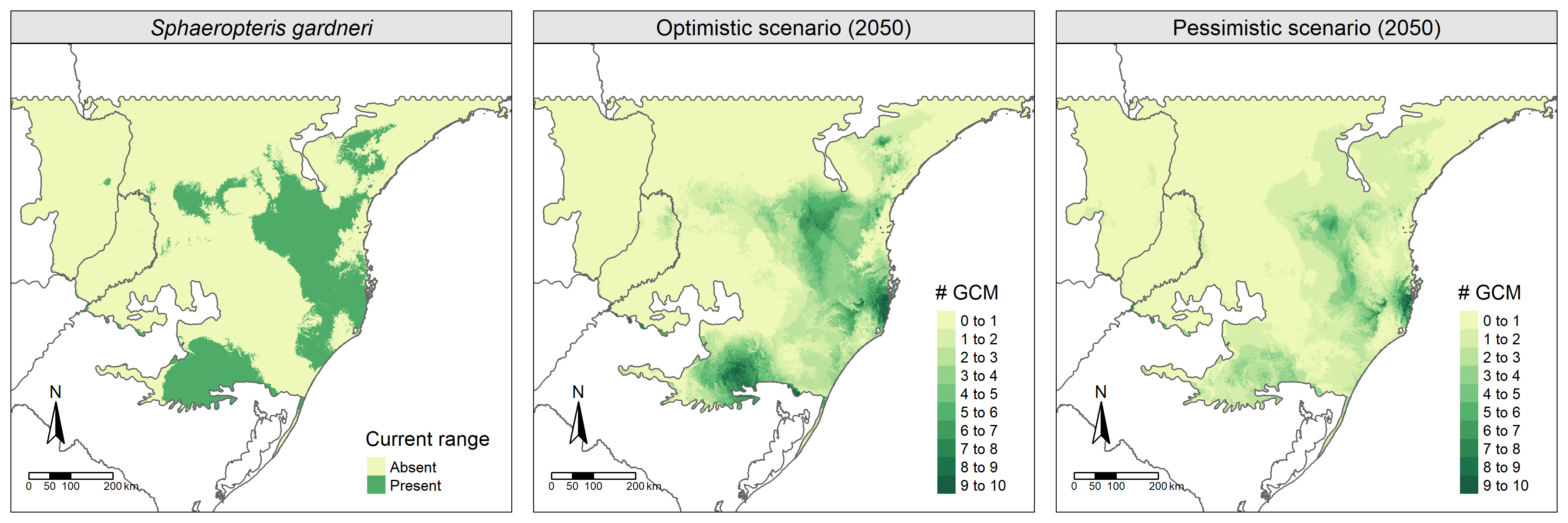
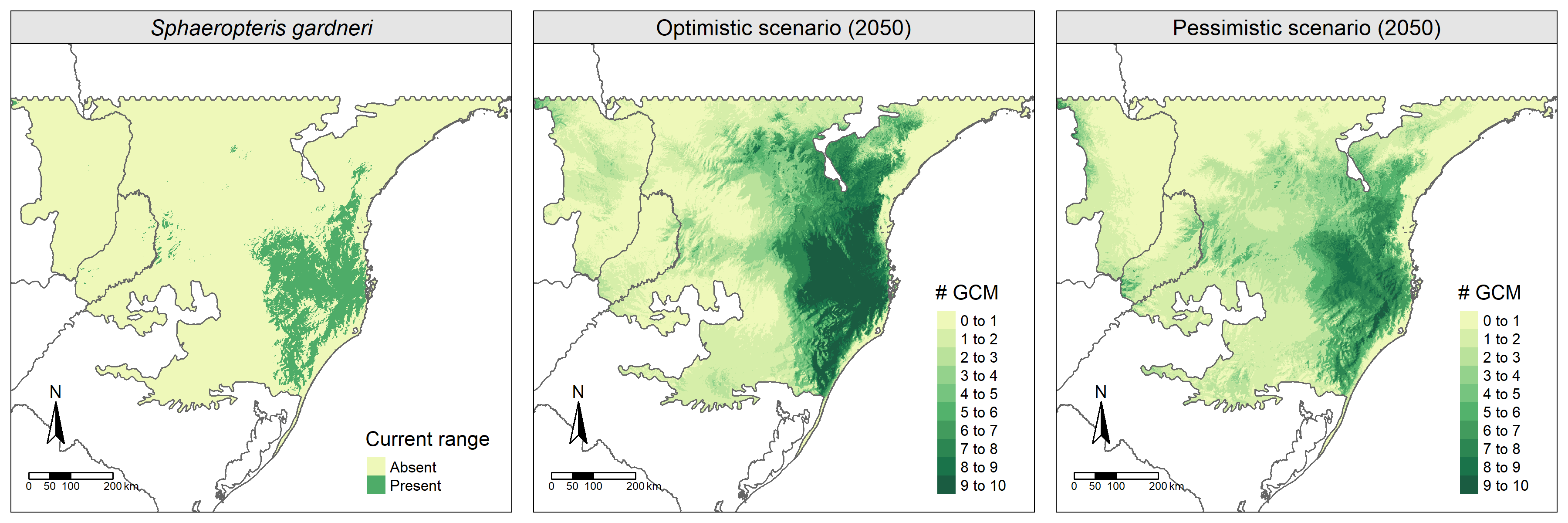


Figure S11. *Lophosoria quadripinnata* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA´s predictions and the second refers to WorldClim´s predictions.

**

**

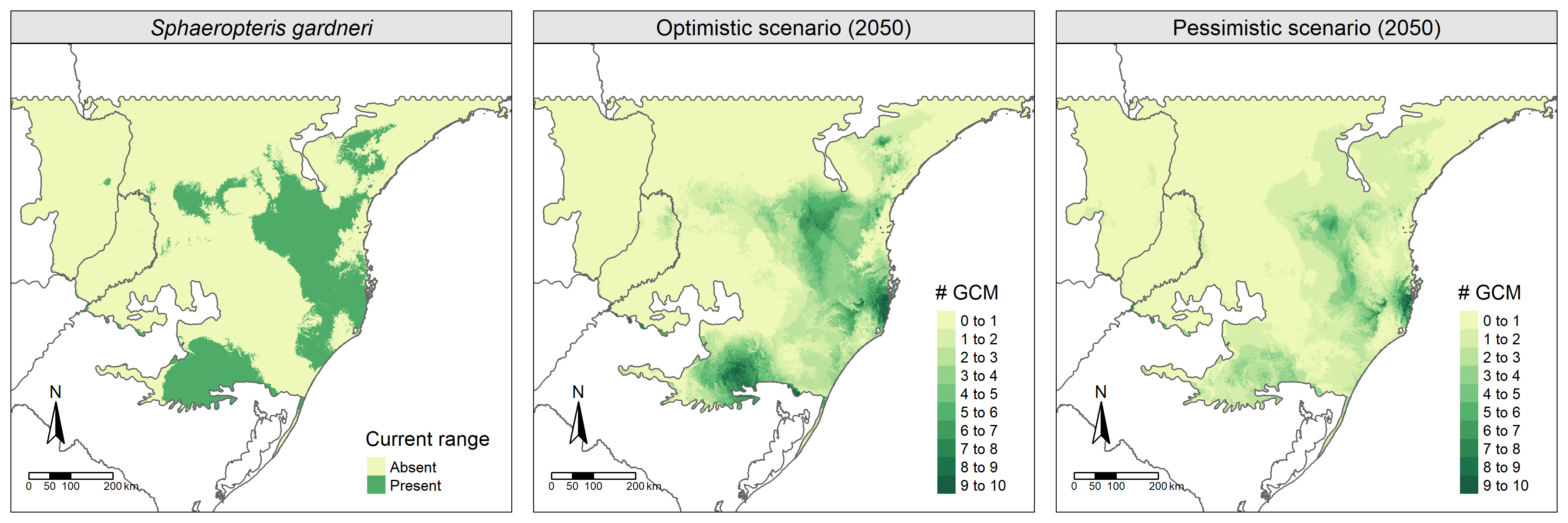
**

Figure S12. *Sphaeropteris gardneri* distribution based on modeled (current) and projected (future) scenarios. The legend indicates how many General Circulation Models (GCM) agree with the presence of the species in each raster cell from each scenario. The first line of maps refers to CHELSA’s predictions and the second refers to WorldClim’s predictions.

**Table S01.** Mean changes (%) in the distribution of species regarding the climatic data set, future scenario, and region. Negative values represent predicted loss in species−area, while positive values represent predicted gains. Omitted values are non-significant changes. SAF – All subtropical Atlantic Forest; PA – Only Protected Areas; OPT – optimistic future scenario; PES – pessimistic future scenario.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SPECIES** | **CHELSA** | | | | **WorldClim** | | | |
| **SAF** | | **PA** | | **SAF** | | **PA** | |
| **OPT** | **PES** | **OPT** | **PES** | **OPT** | **PES** | **OPT** | **PES** |
| Cyatheaceae | | | | | | | |
| *Alsophila setosa* | −38.31 | −54.51 | −41.13 | −60.83 | – | – | −20.49 | – |
| *Alsophila sternbergii* | 67.68 | 103.51 | 17.49 | 30.71 | 14.51 | – | 5.78 | – |
| *Cyathea atrovirens* | – | −39.74 | −27.90 | −39.64 | 24.55 | 39.03 | – | – |
| *Cyathea corcovadensis* | – | −46.57 | – | −48.38 | −27.63 | −34.21 | −20.96 | −36.68 |
| *Cyathea delgadii* | −40.63 | −43.80 | −57.47 | −75.40 | – | – | 10.24 | – |
| *Cyathea feeana* | – | – | – | – | −50.03 | −70.05 | −73.67 | −81.79 |
| *Cyathea leucofolis* | 116.77 | 178.19 | 30.60 | 55.19 | 41.04 | 82.50 | 28.99 | – |
| *Cyathea phalerata* | – | −46.49 | −28.69 | −60.27 | −30.26 | −38.97 | −17.30 | – |
| *Gymnosphaera capensis* | −41.30 | −64.04 | −42.22 | −63.49 | −25.54 | −40.16 | −27.47 | −41.49 |
| *Sphaeropteris gardneri* | 137.33 | – | 138.11 | – | −41.14 | −62.21 | −68.45 | −78.66 |
|  | Dicksoniaceae | | | | | | | |
| *Dicksonia sellowiana* | −57.40 | −65.62 | −55.03 | −65.52 | – | −37.86 | – | −47.27 |
| *Lophosoria quadripinnata* | −64.47 | −74.08 | −60.98 | −71.56 | −48.94 | −57.91 | −63.51 | −67.48 |

**Table S02**. Model parameters (RM and FC) chosen via AICc and evaluation for each species in each data set (CHELSA × WorldClim). As *Cyathea hirsuta* (red) obtained a evaluation lower than 0.5 we removed it from our analyses. RM = Regularization Multiplier; FC = Feature Classes; CBI = Continuous Boyce Index. L = Linear; Q = Quadratic; H = Hinge; P = Product; T = Threshold.

|  |  |  |  |
| --- | --- | --- | --- |
| CHELSA | | | |
| **Species** | **RM** | **FC** | **CBI** |
| *Alsophila setosa* | 0.5 | LQ | 0.916 |
| *Alsophila sternbergii* | 2 | LQP | 0.553 |
| *Cyathea atrovirens* | 0.5 | LQ | 0.659 |
| *Cyathea corcovadensis* | 2.5 | LQHPT | 0.751 |
| *Cyathea delgadii* | 3 | LQHP | 0.854 |
| *Cyathea feeana* | 0.5 | LQ | 0.686 |
| *Cyathea hirsuta* | 2 | LQH | 0.083 |
| *Cyathea leucofolis* | 2.5 | LQP | 0.891 |
| *Cyathea phalerata* | 0.5 | LQ | 0.825 |
| *Cyathea villosa* | 2 | LQ | 0.555 |
| *Dicksonia sellowiana* | 2 | LQP | 0.971 |
| *Gymnosphaera capensis* | 0.5 | LQP | 0.888 |
| *Lophosoria quadripinnata* | 1 | LQ | 0.739 |
| *Sphaeropteris gardneri* | 0.5 | LQ | 0.698 |
|  |  |  |  |
| WorldClim | | | |
| *Alsophila setosa* | 1.5 | LQP | 0.879 |
| *Alsophila sternbergii* | 1 | LQ | 0.646 |
| *Cyathea atrovirens* | 2 | LQHP | 0.964 |
| *Cyathea corcovadensis* | 1 | LQ | 0.883 |
| *Cyathea delgadii* | 0.5 | LQ | 0.948 |
| *Cyathea feeana* | 0.5 | LQP | 0.721 |
| *Cyathea hirsuta* | 3 | H | 0.817 |
| *Cyathea leucofolis* | 0.5 | LQP | 0.703 |
| *Cyathea phalerata* | 2 | LQ | 0.903 |
| *Cyathea villosa* | 1.5 | L | 0.814 |
| *Dicksonia sellowiana* | 4 | LQH | 0.946 |
| *Gymnosphaera capensis* | 1 | LQ | 0.818 |
| *Lophosoria quadripinnata* | 1.5 | LQP | 0.767 |
| *Sphaeropteris gardneri* | 0.5 | L | 0.694 |