

Appendix S5: Individual maps of single models for *Fagus sylvatica* and *Picea abies*

The following material presents all maps generated by the single models for *Fagus sylvatica* and *Picea abies* as examples of how the statistical models differ in the spatial patterns produced.

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Current climate	3
2020 CLM / ECHAM5 climate	4
2020 HadRM3q0 / HadCM3 climate	5
2020 Hirham / Arpege climate	6
2020 RACMO2 / ECHAM5 climate	7
2020 RCA30 / CCSM3 climate	8
2020 RCA30 / ECHAM5 climate	9
2050 CLM / ECHAM5 climate	10
2050 HadRM3q0 / HadCM3 climate	11
2050 Hirham / Arpege climate	12
2050 RACMO2 / ECHAM5 climate	13
2050 RCA30 / CCSM3 climate	14
2050 RCA30 / ECHAM5 climate	15
2080 CLM / ECHAM5 climate	16
2080 HadRM3q0 / HadCM3 climate	17
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Current climate	22
2020 CLM / ECHAM5 climate	23
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2050 CLM / ECHAM5 climate	29
2050 HadRM3q0 / HadCM3 climate	30
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Abbreviations used in the following appendix maps: GLM – Generalized Linear Models; GAM – Generalized Additive Models; GBM – Generalized Boosting Machine; CTA – Classification Tree Analysis; ANN – Artificial Neural Networks; MDA – Flexible Discriminant Analysis.

Explanations: Each map represents a time step (2020 stand for mean climate of 1991-2020; 2050 stands for mean climate of 2021-2050; 2080 stands for mean climate of 2051-2080) and one climate model. The climate models are explained in the main report. We have used regional climate model (RCM) output and downscaled this output to the 1 km scale used here. Each RCM is driven by one global circulation model (GCM) output as input to the RCM, therefore we always list both the RCM (in bold) and the GCM. Each species was modelled with six different statistical models (see abbreviations), and applied to each RCM at each time step. In the final model ensembles, those models with too low model accuracies or due to inconsistencies were removed. This is indicated in the summary maps by an asterisk*.

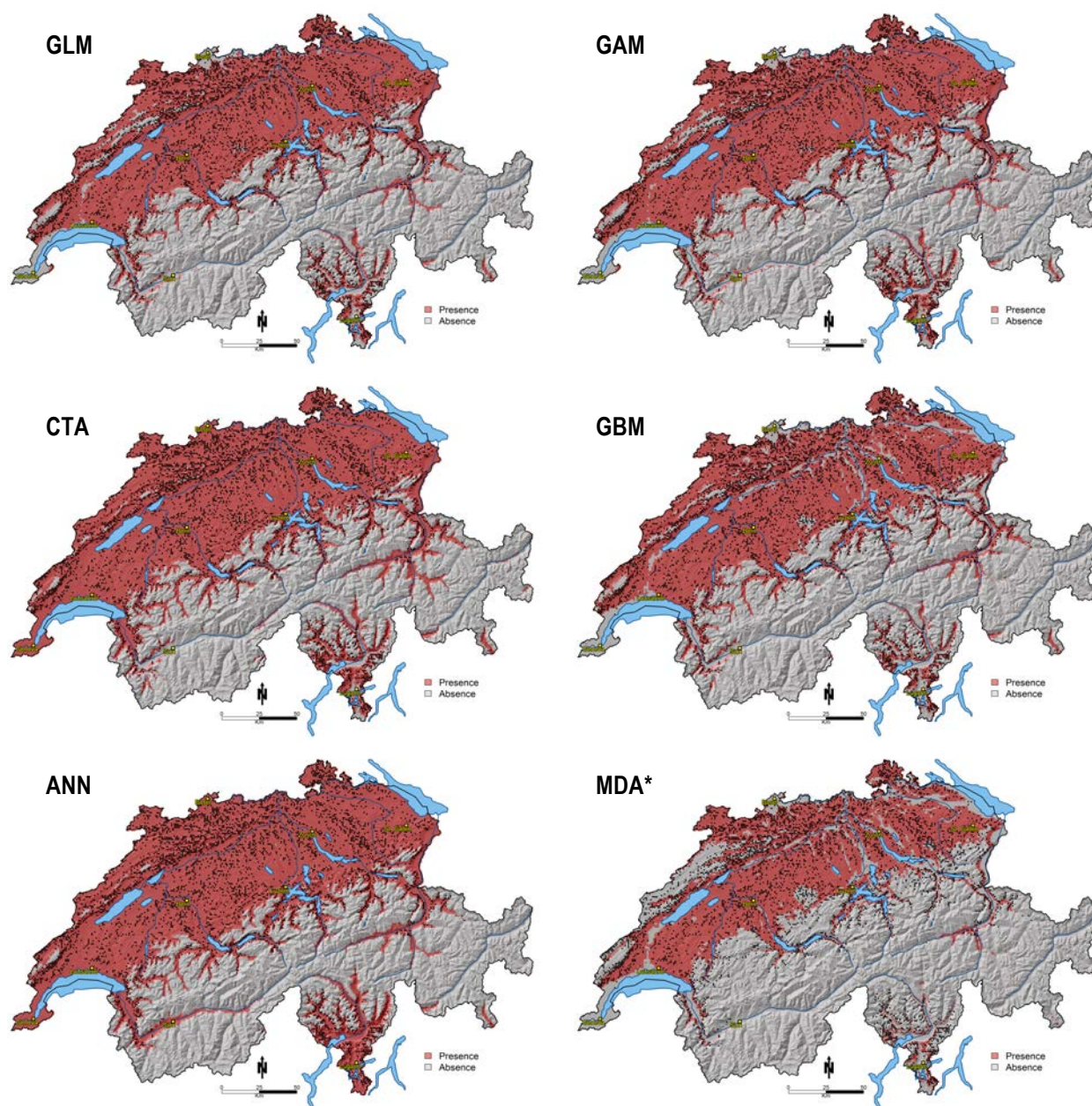
Fagus sylvatica – current climate

Figure S5.1: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

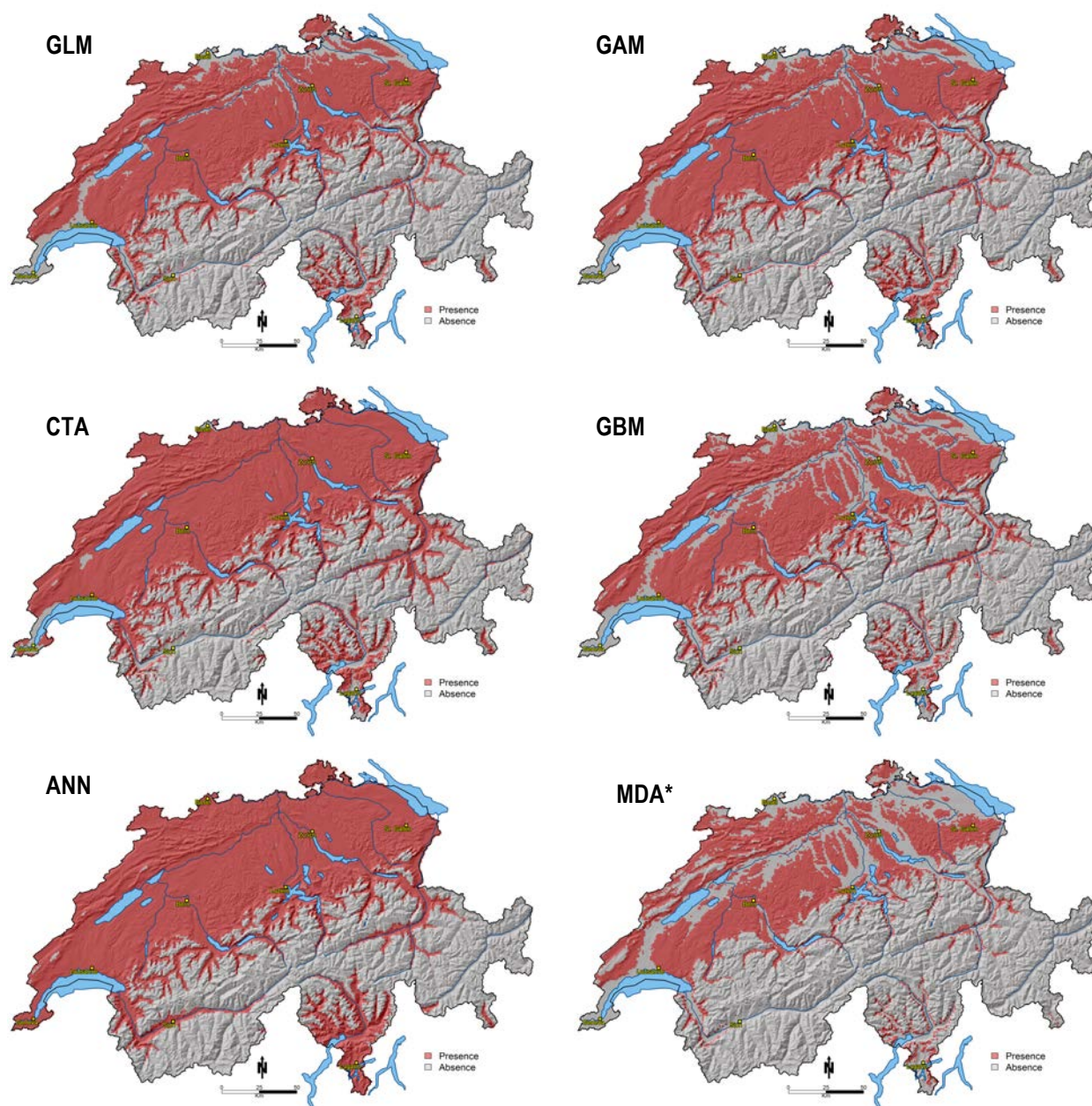
***Fagus sylvatica* – 2020 CLM / ECHAM5 climate**

Figure S5.2: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions

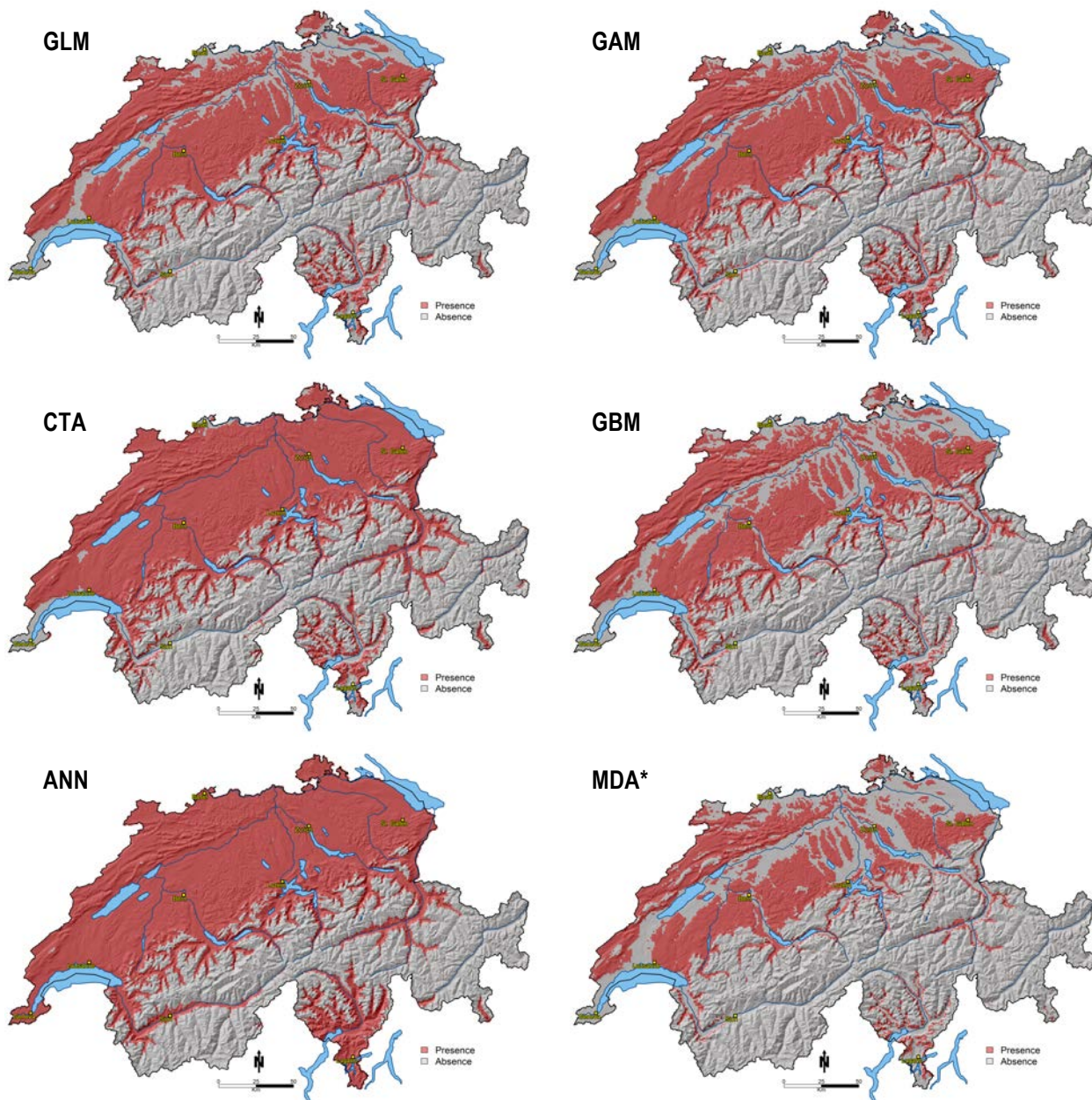
***Fagus sylvatica* – 2020 HadRM3q0 / HadCM3 climate**

Figure S5.3: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

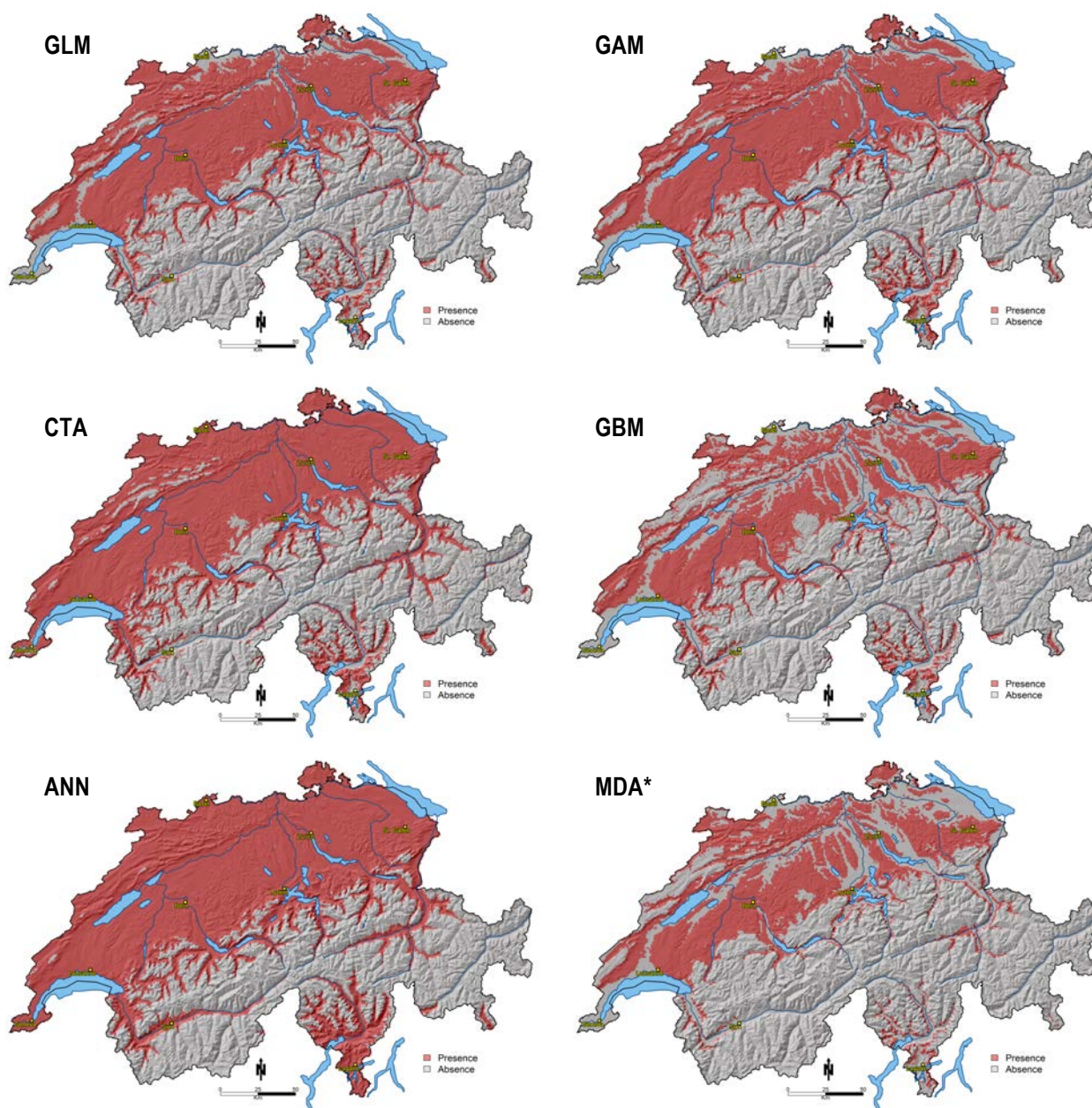
***Fagus sylvatica* – 2020 Hirham / Arpege climate**

Figure S5.4: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

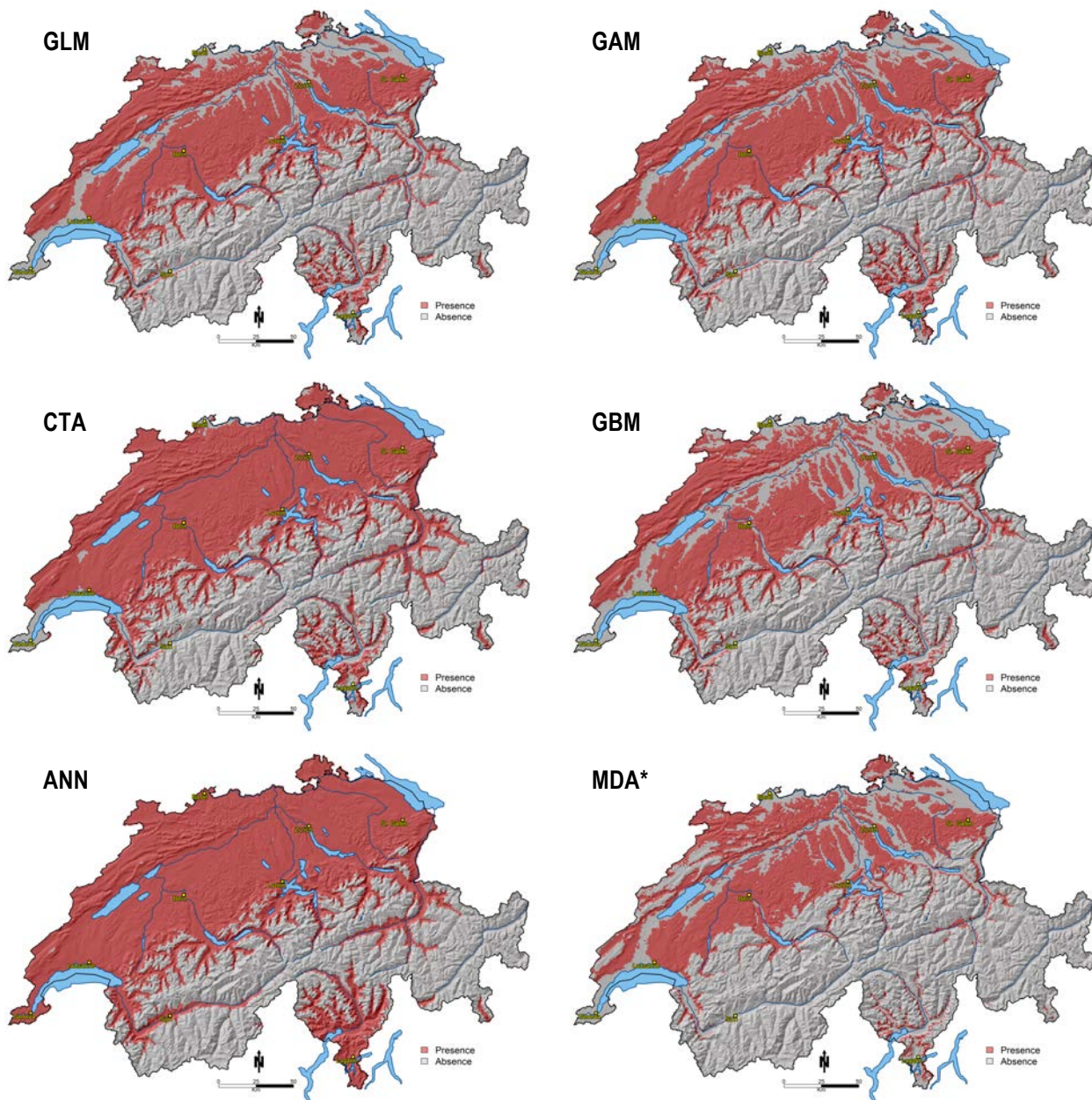
***Fagus sylvatica* – 2020 RACMO2 / ECHAM5 climate**

Figure S5.5: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

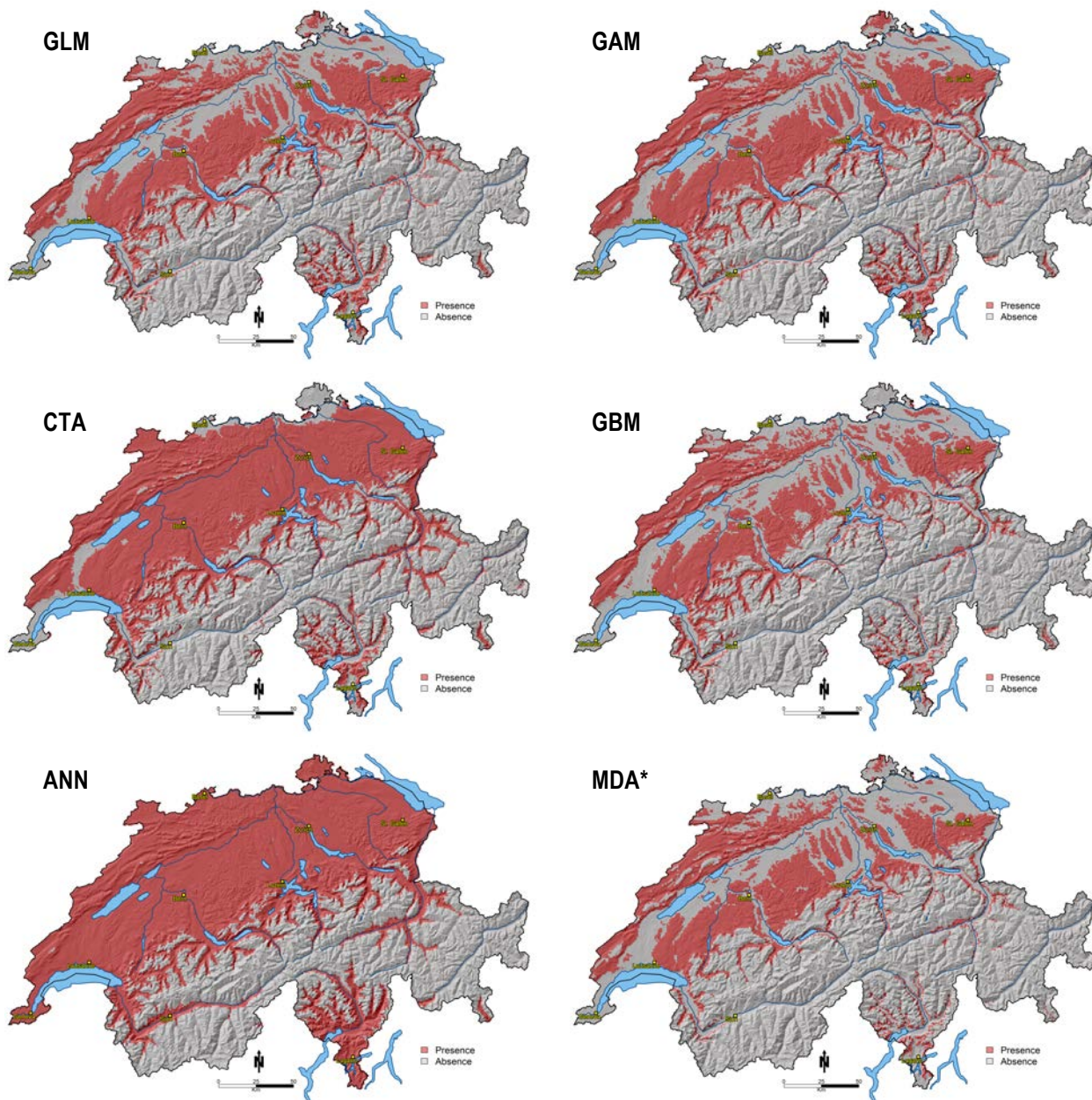
***Fagus sylvatica* – 2020 RCA / CCSM3 climate**

Figure S5.6: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

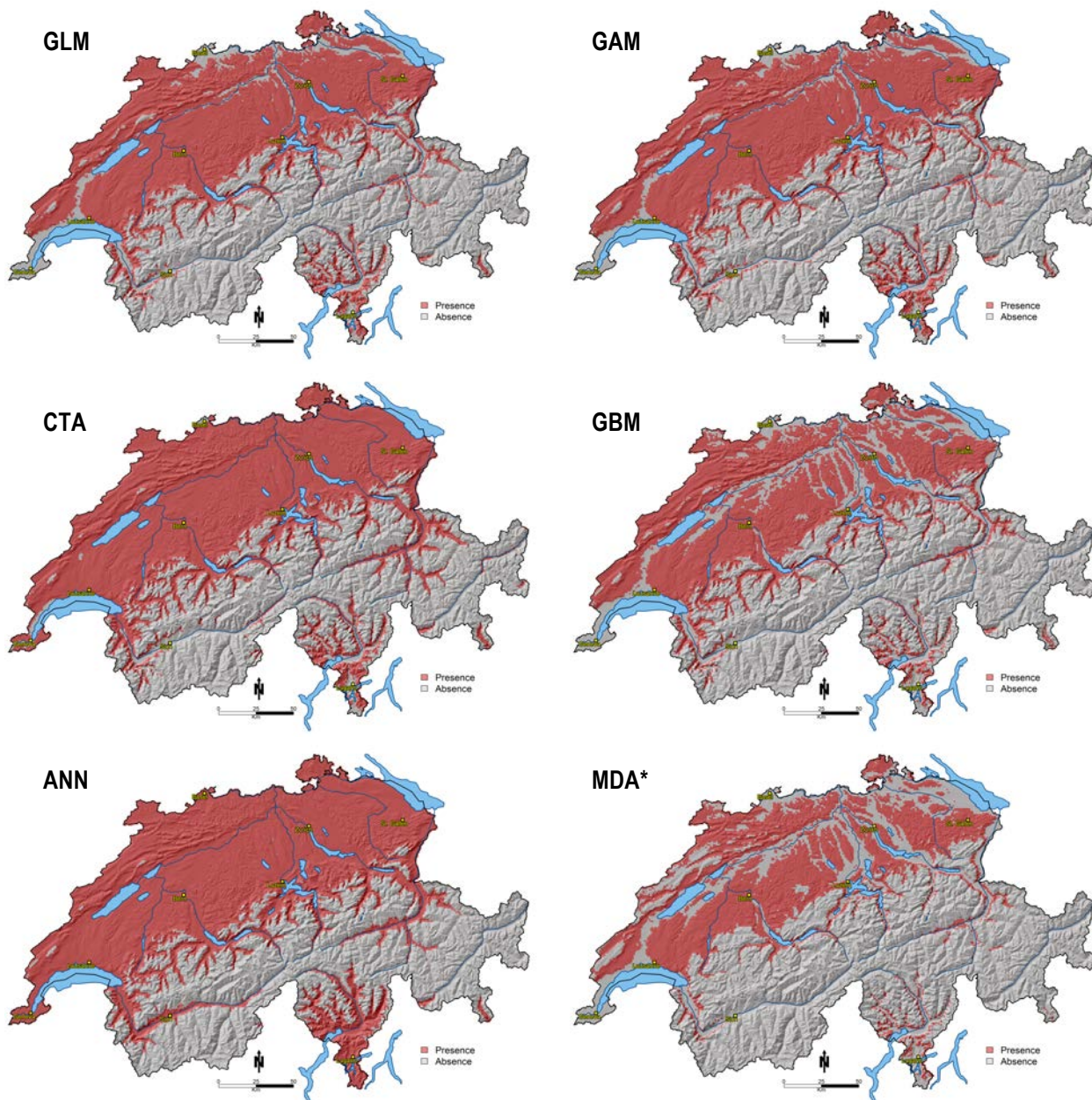
***Fagus sylvatica* – 2020 RCA30 / ECHAM5 climate**

Figure S5.7: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

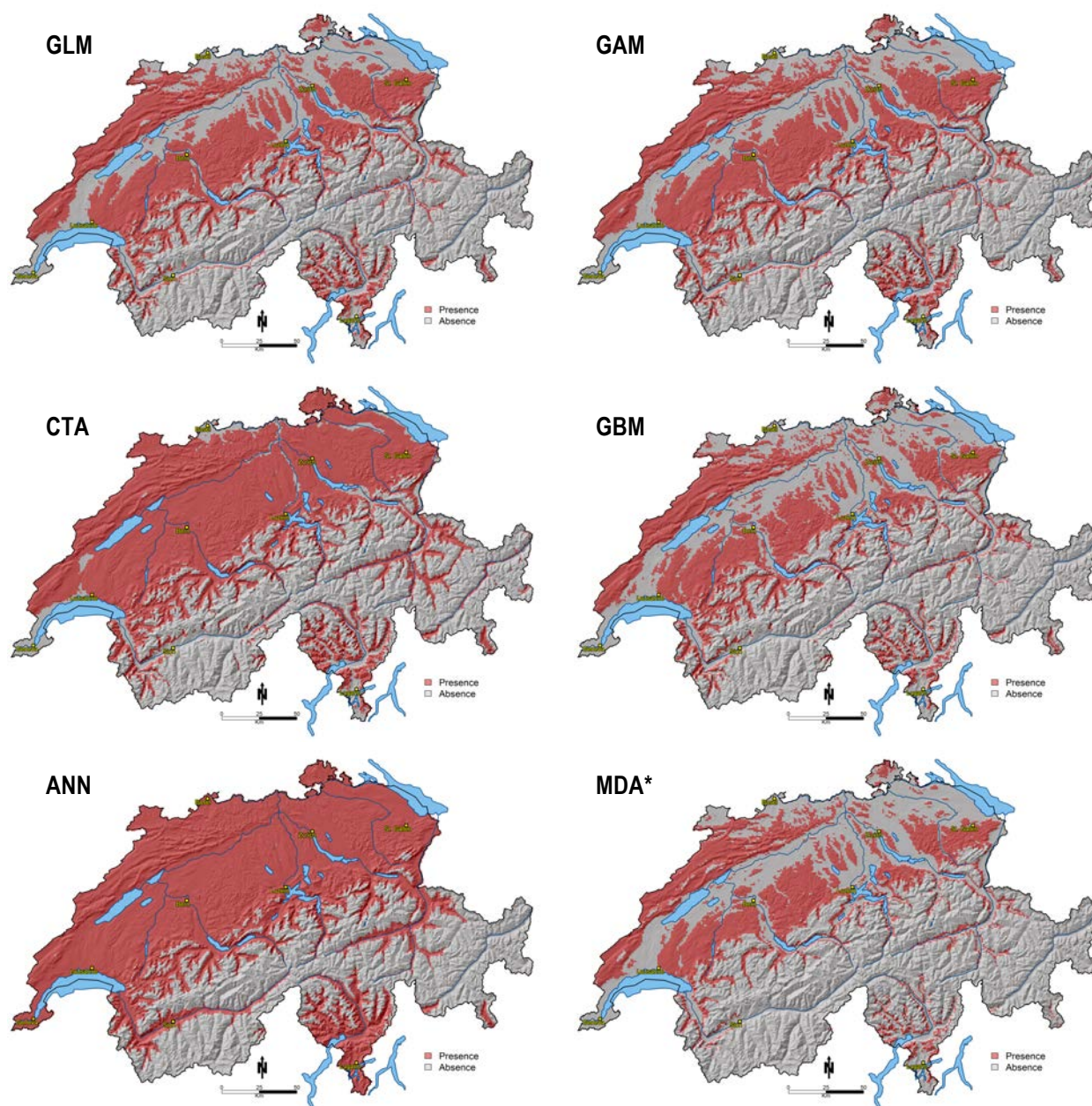
***Fagus sylvatica* – 2050 CLM / ECHAM5 climate**

Figure S5.8: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions

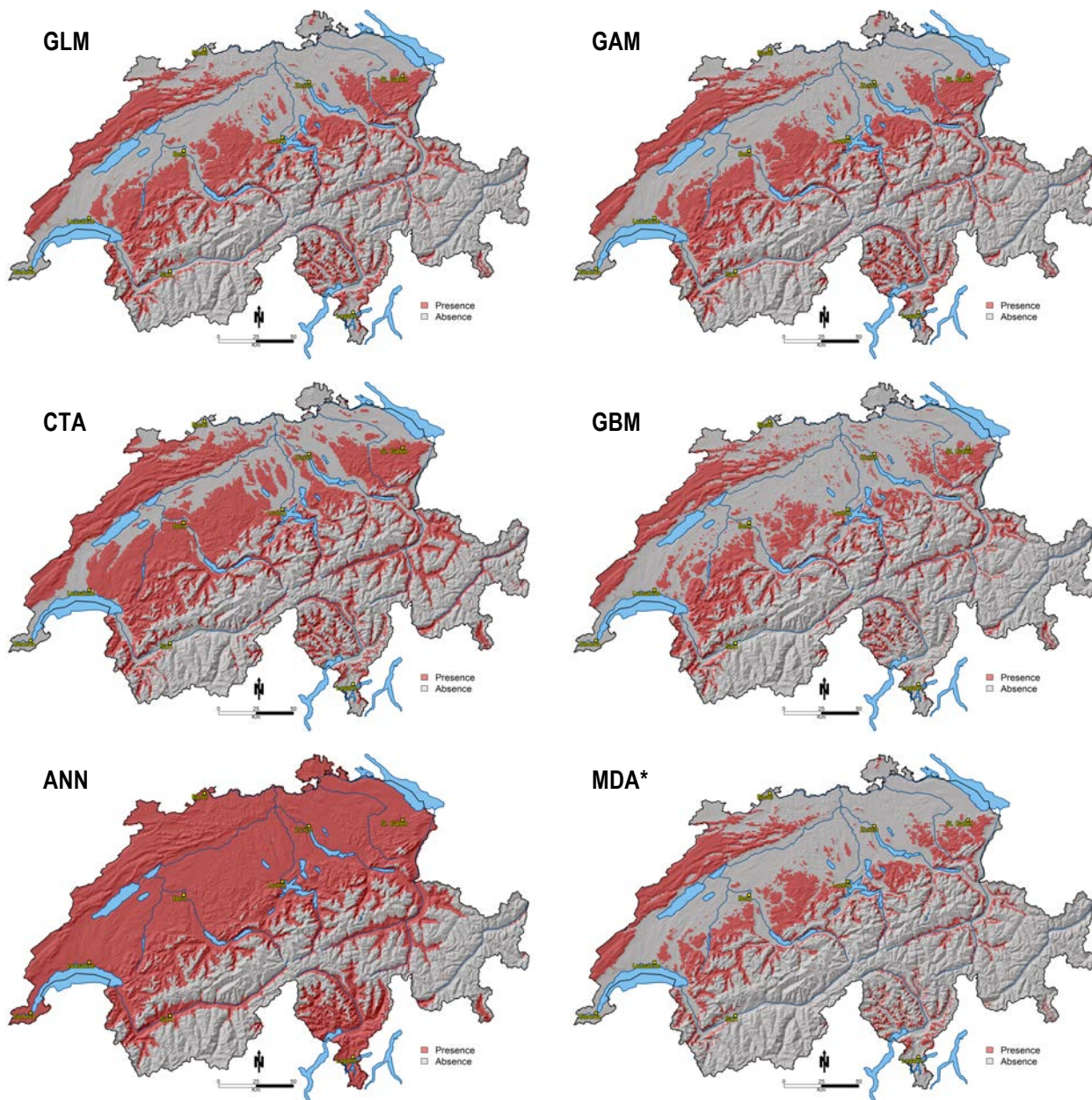
***Fagus sylvatica* – 2050 HadRM3q0 / HadCM3 climate**

Figure S5.9: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

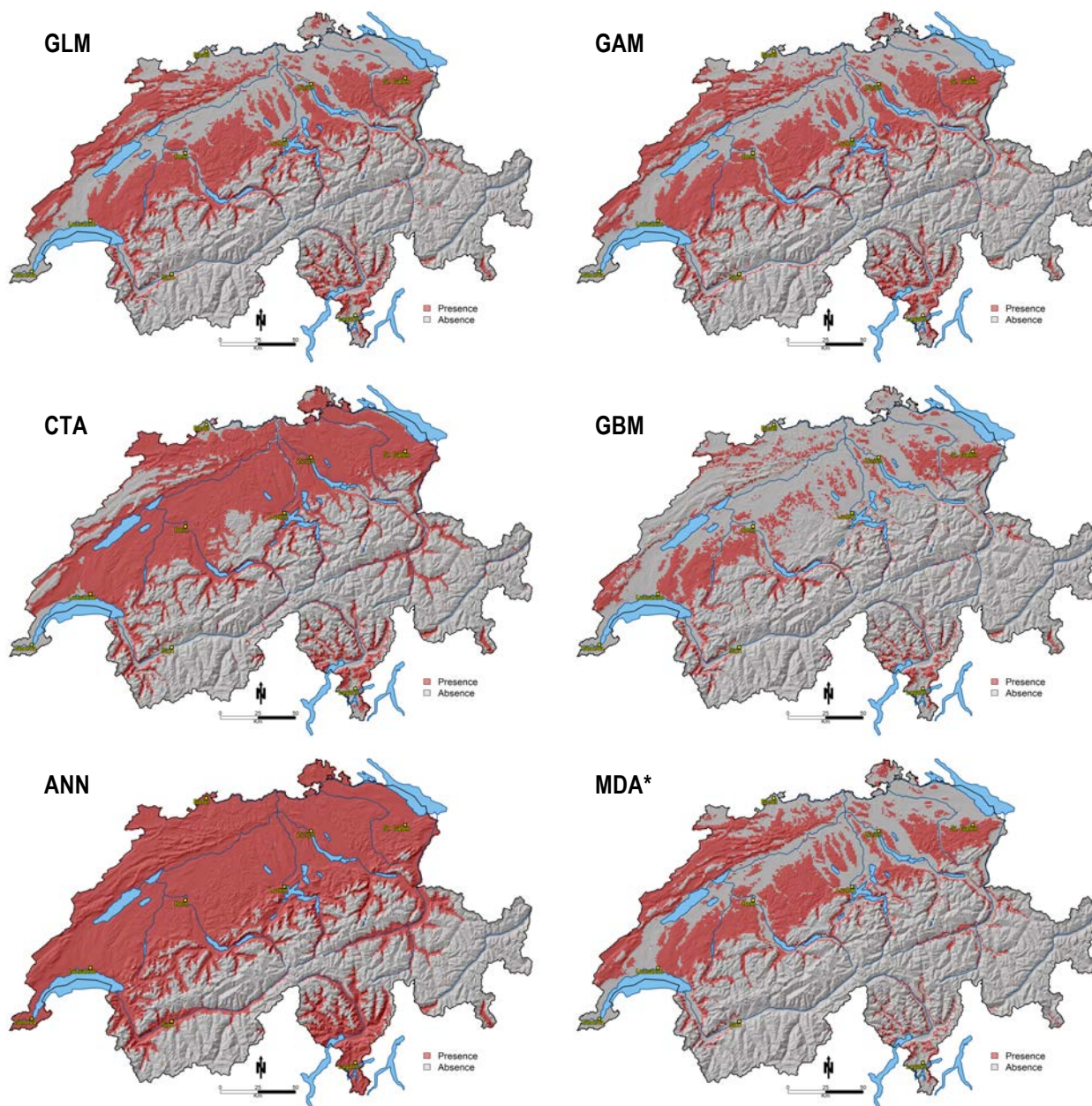
***Fagus sylvatica* – 2050 Hirham / Arpege climate**

Figure S5.10: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

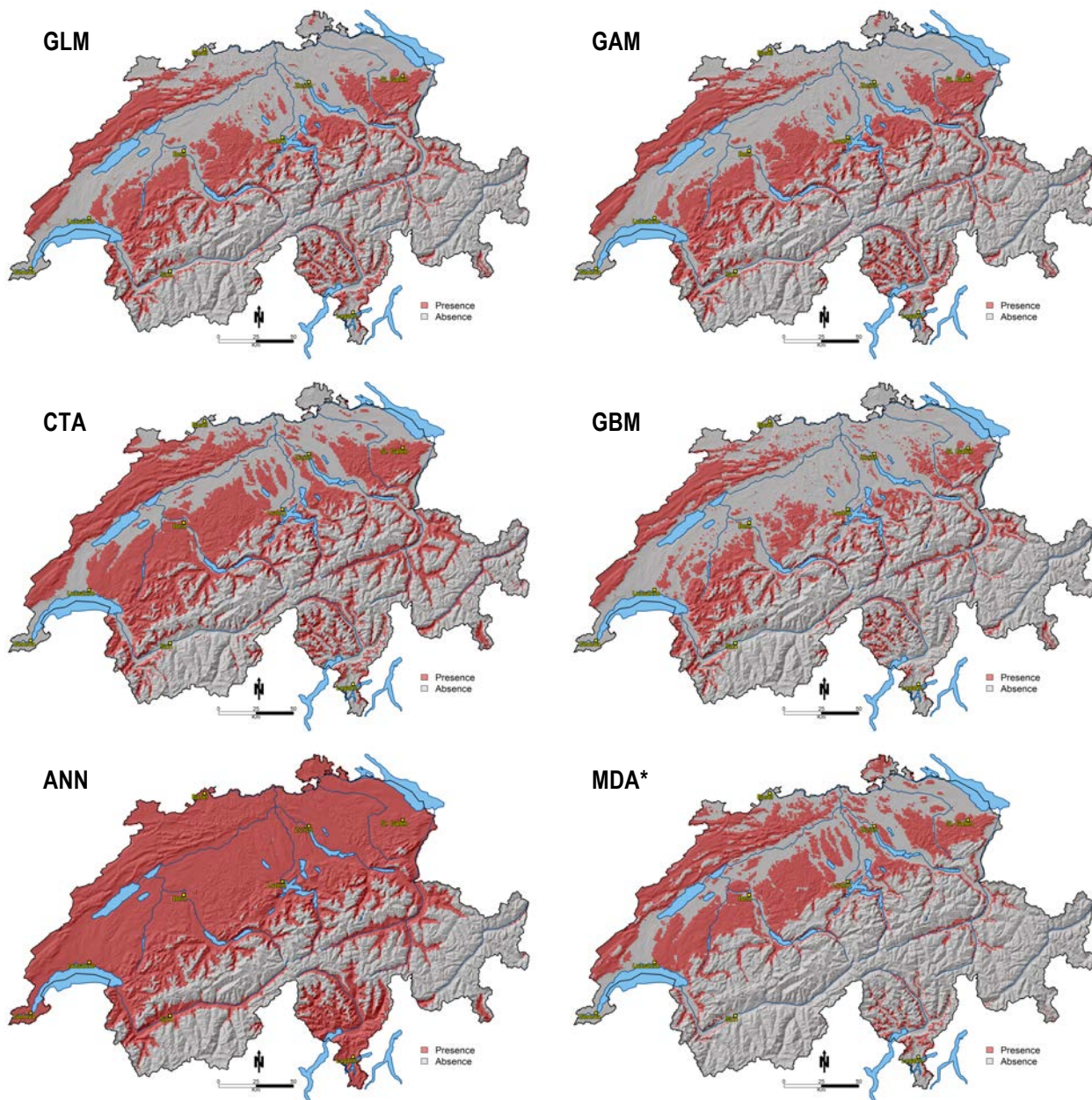
***Fagus sylvatica* – 2050 RACMO2 / ECHAM5 climate**

Figure S5.11: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

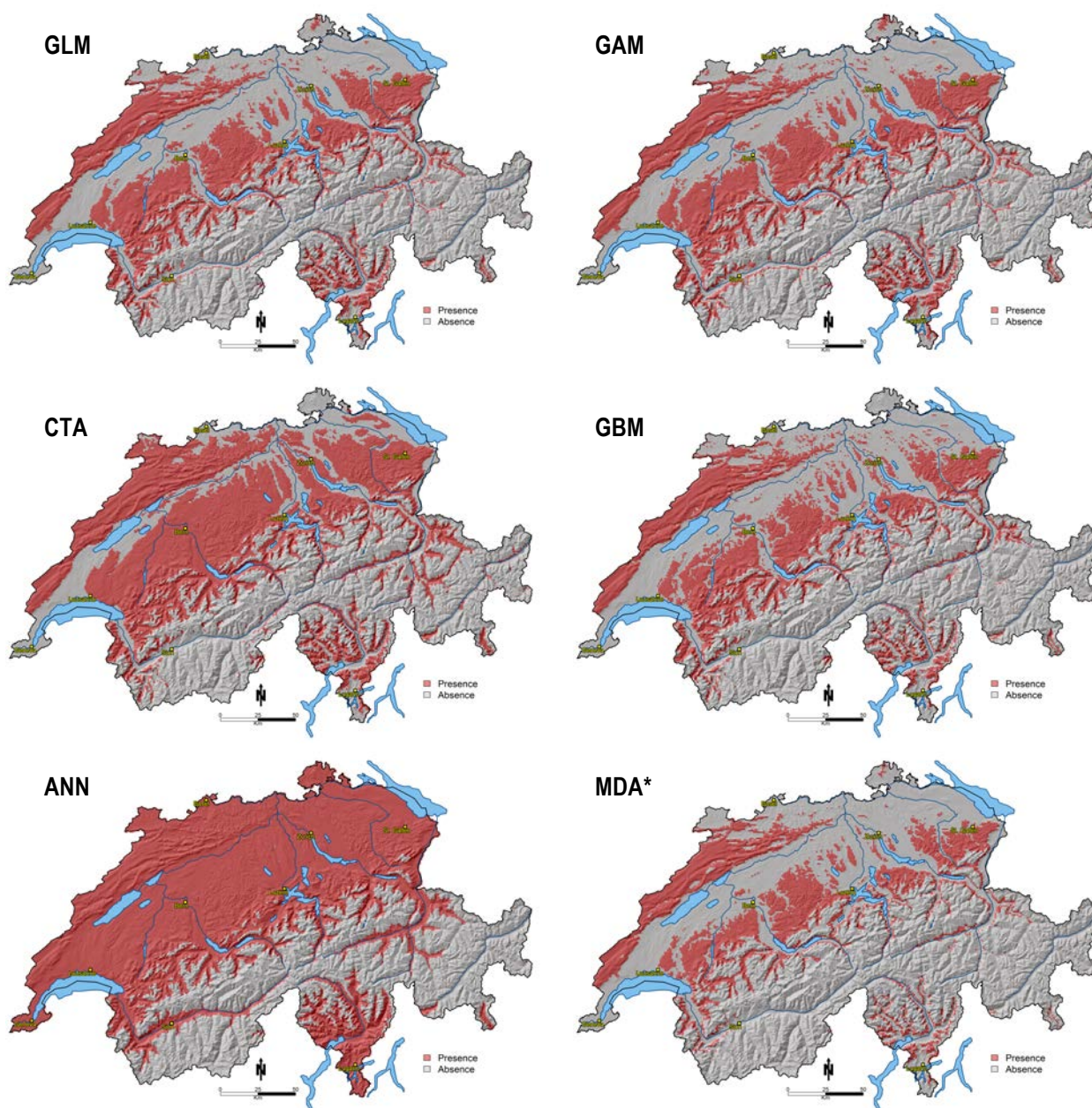
***Fagus sylvatica* – 2050 RCA / CCSM3 climate**

Figure S5.12: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

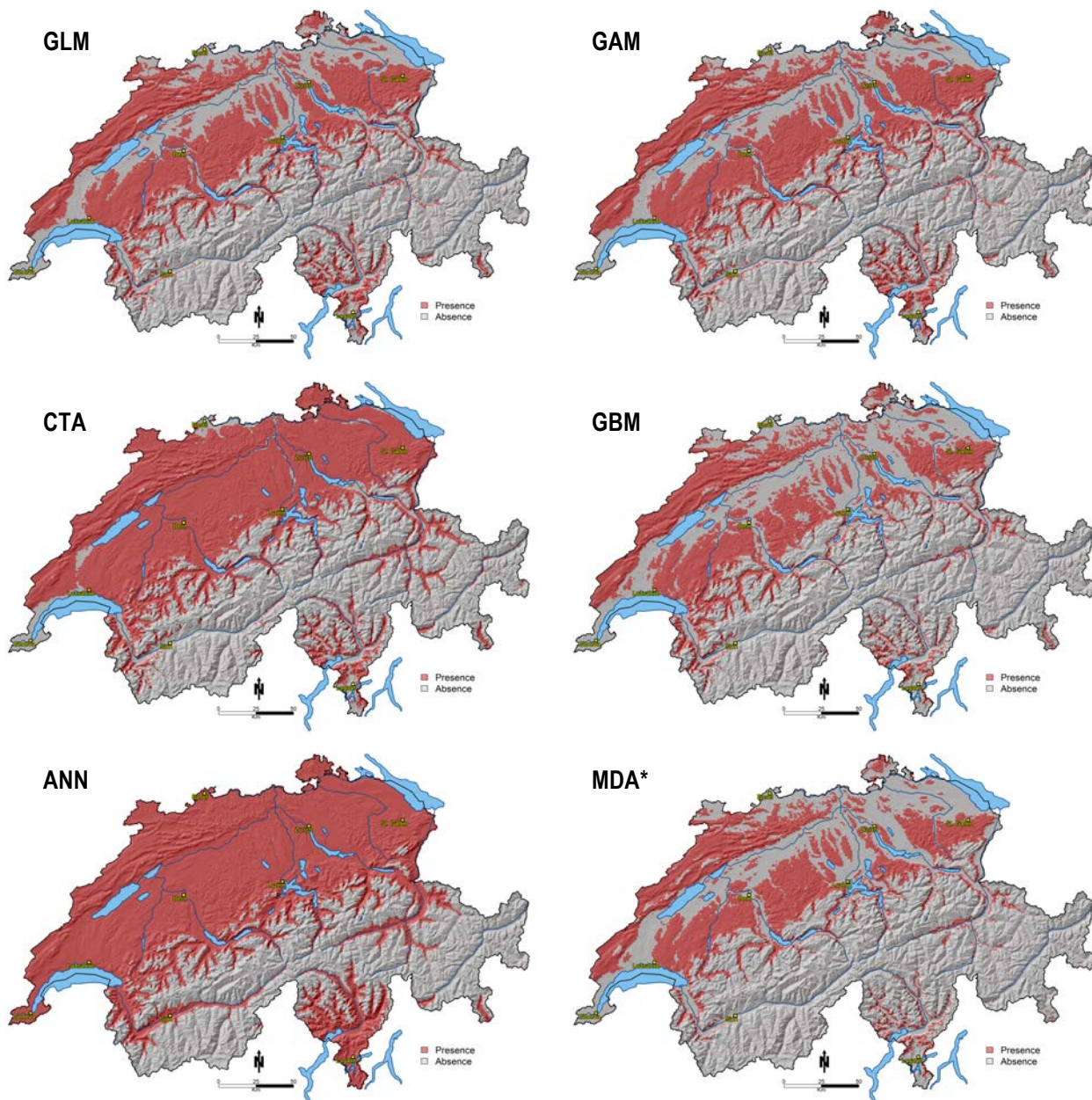
***Fagus sylvatica* – 2050 RCA30 / ECHAM5 climate**

Figure S5.13: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

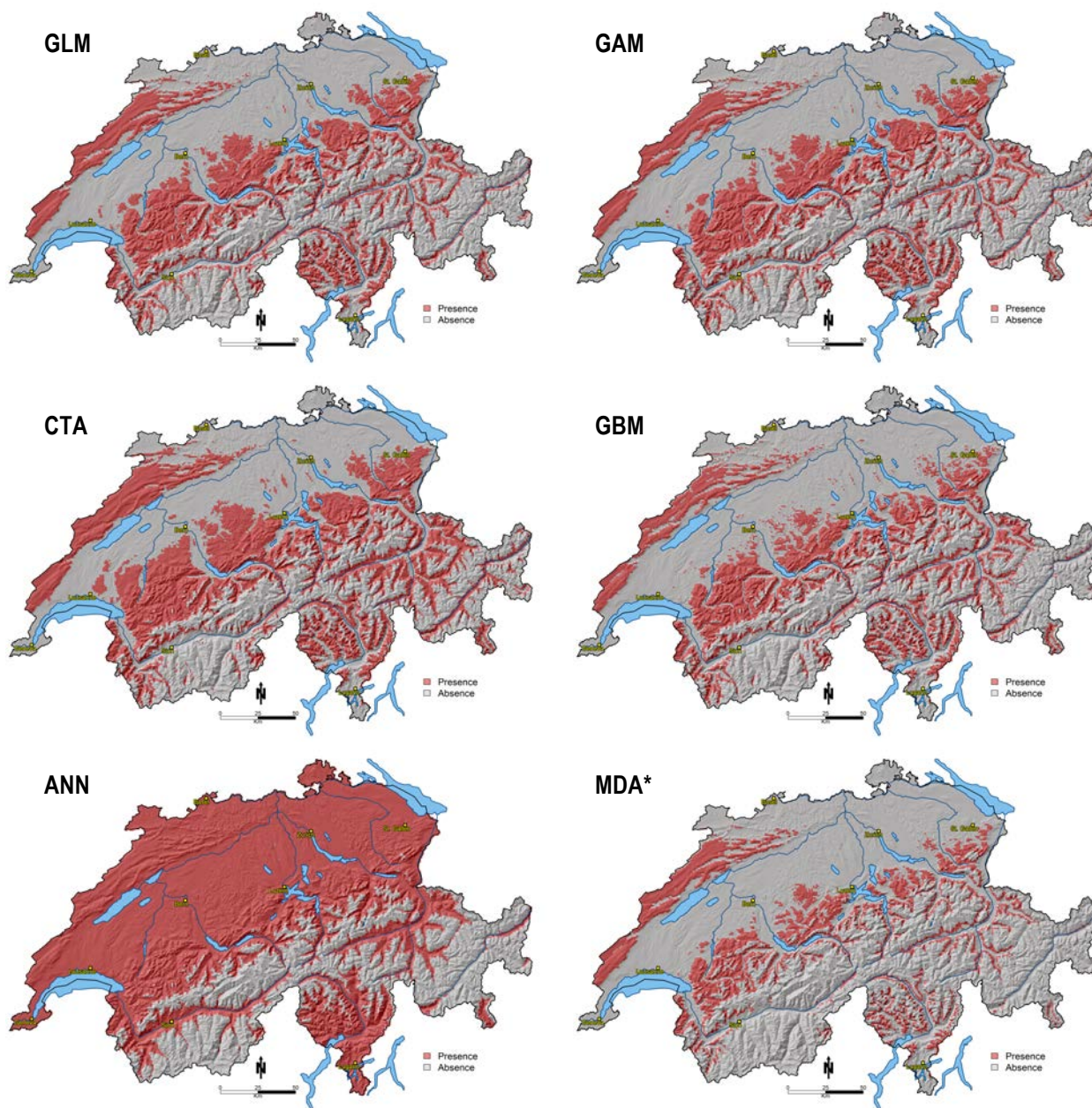
***Fagus sylvatica* – 2080 CLM / ECHAM5 climate**

Figure S5.14: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions

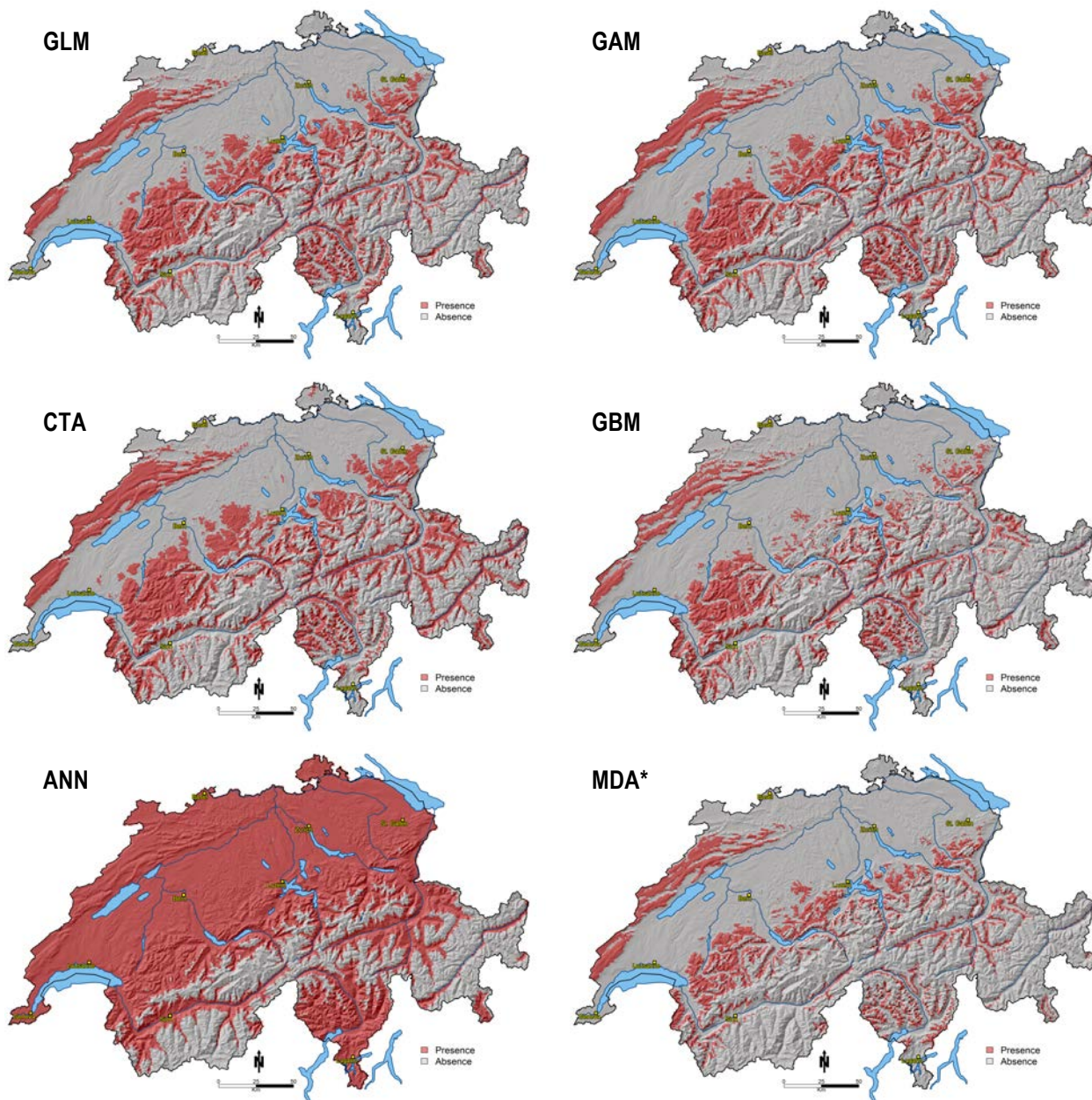
***Fagus sylvatica* – 2080 HadRM3q0 / HadCM3 climate**

Figure S5.15: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

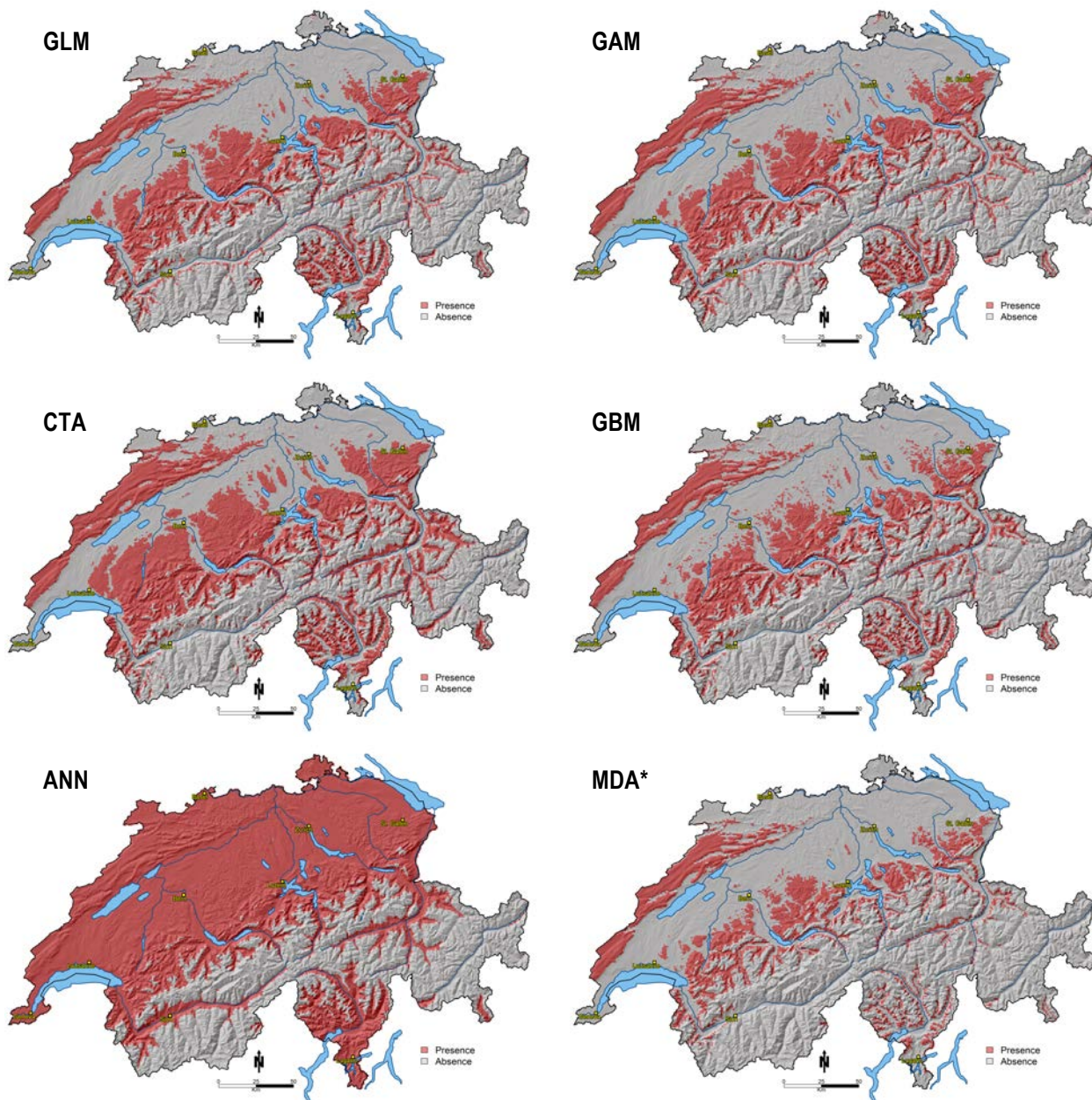
***Fagus sylvatica* – 2080 Hirham / Arpege climate**

Figure S5.16: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

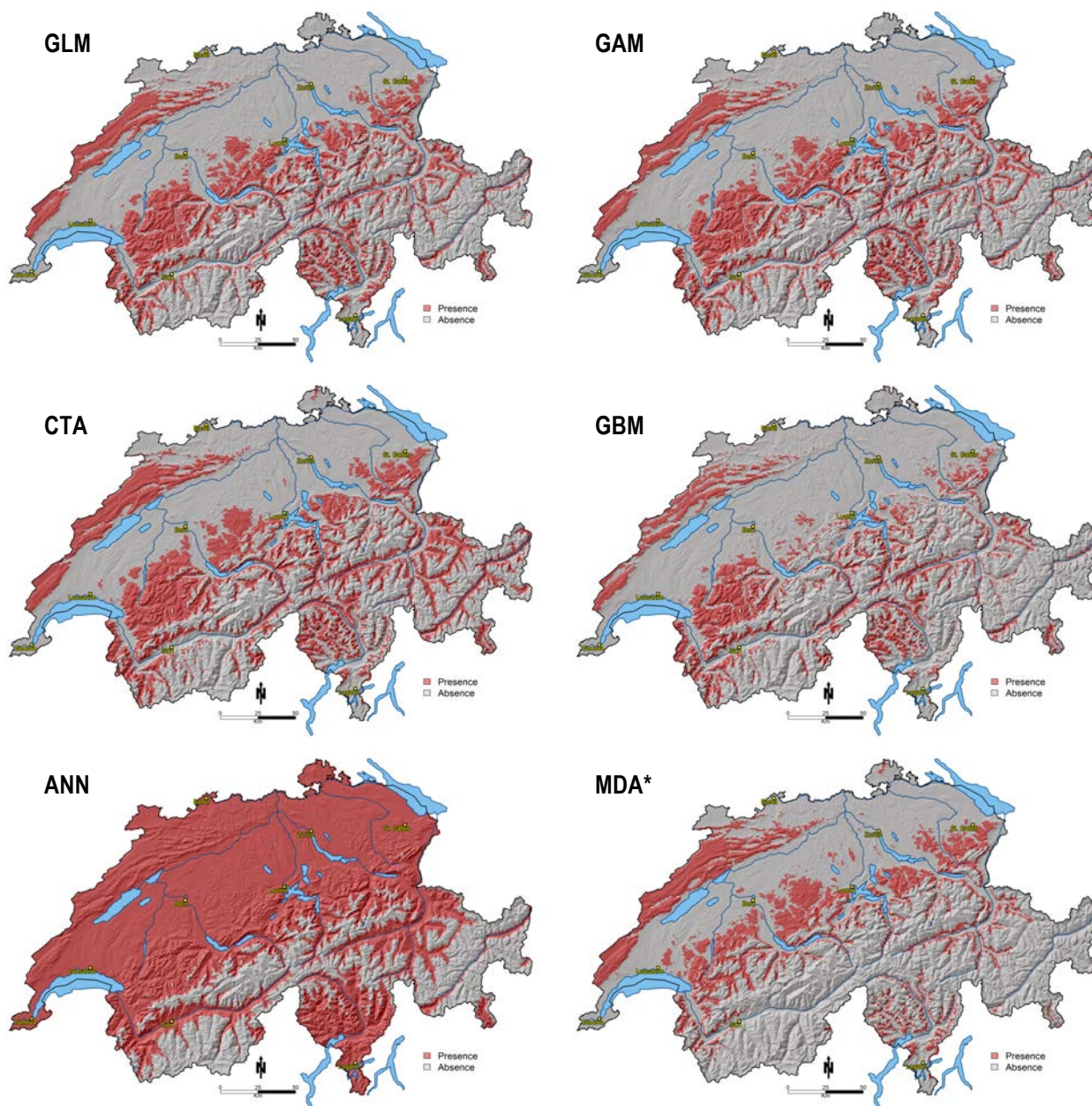
***Fagus sylvatica* – 2080 RACMO2 / ECHAM5 climate**

Figure S5.17: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

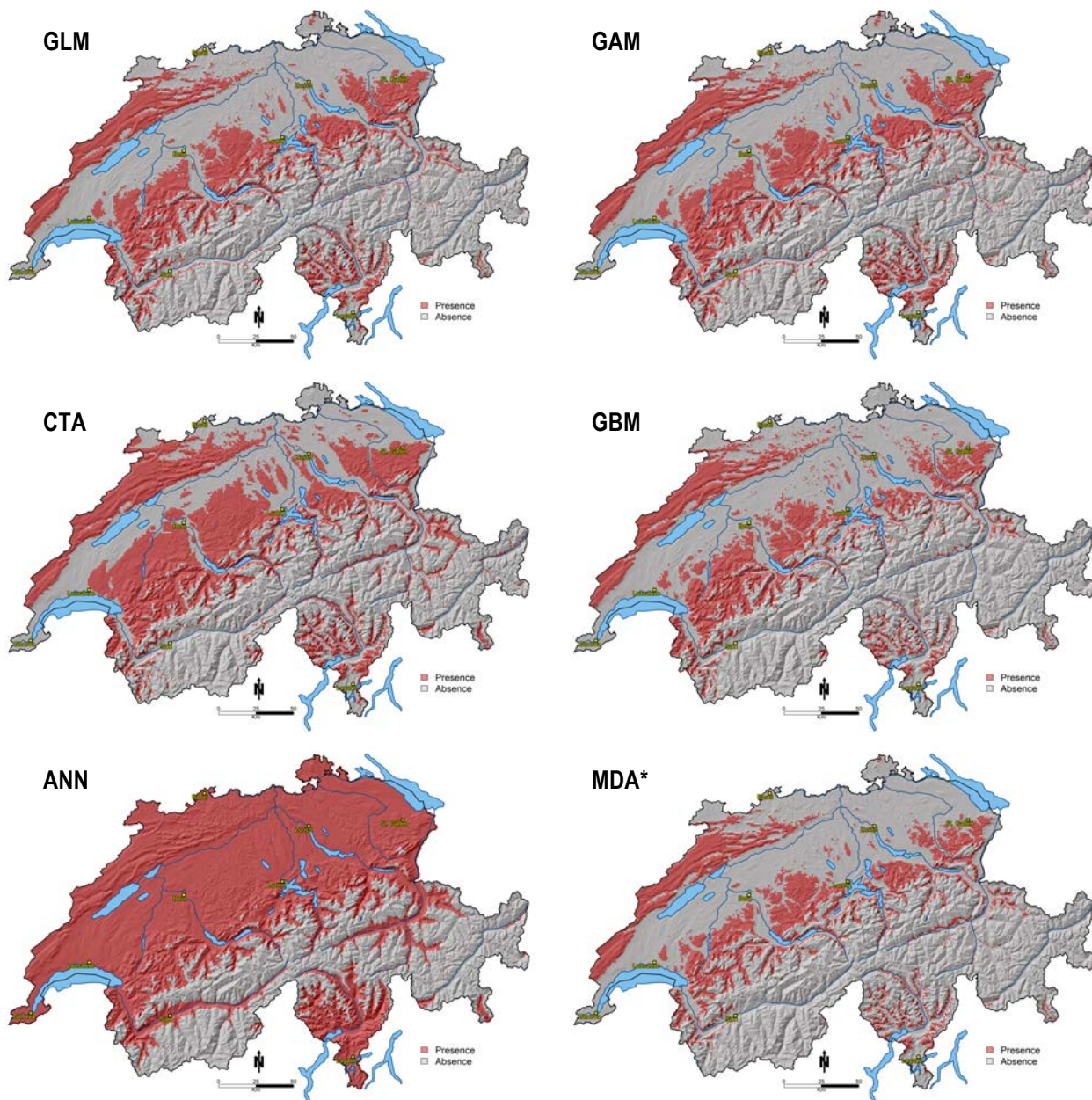
***Fagus sylvatica* – 2080 RCA / CCSM3 climate**

Figure S5.18: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

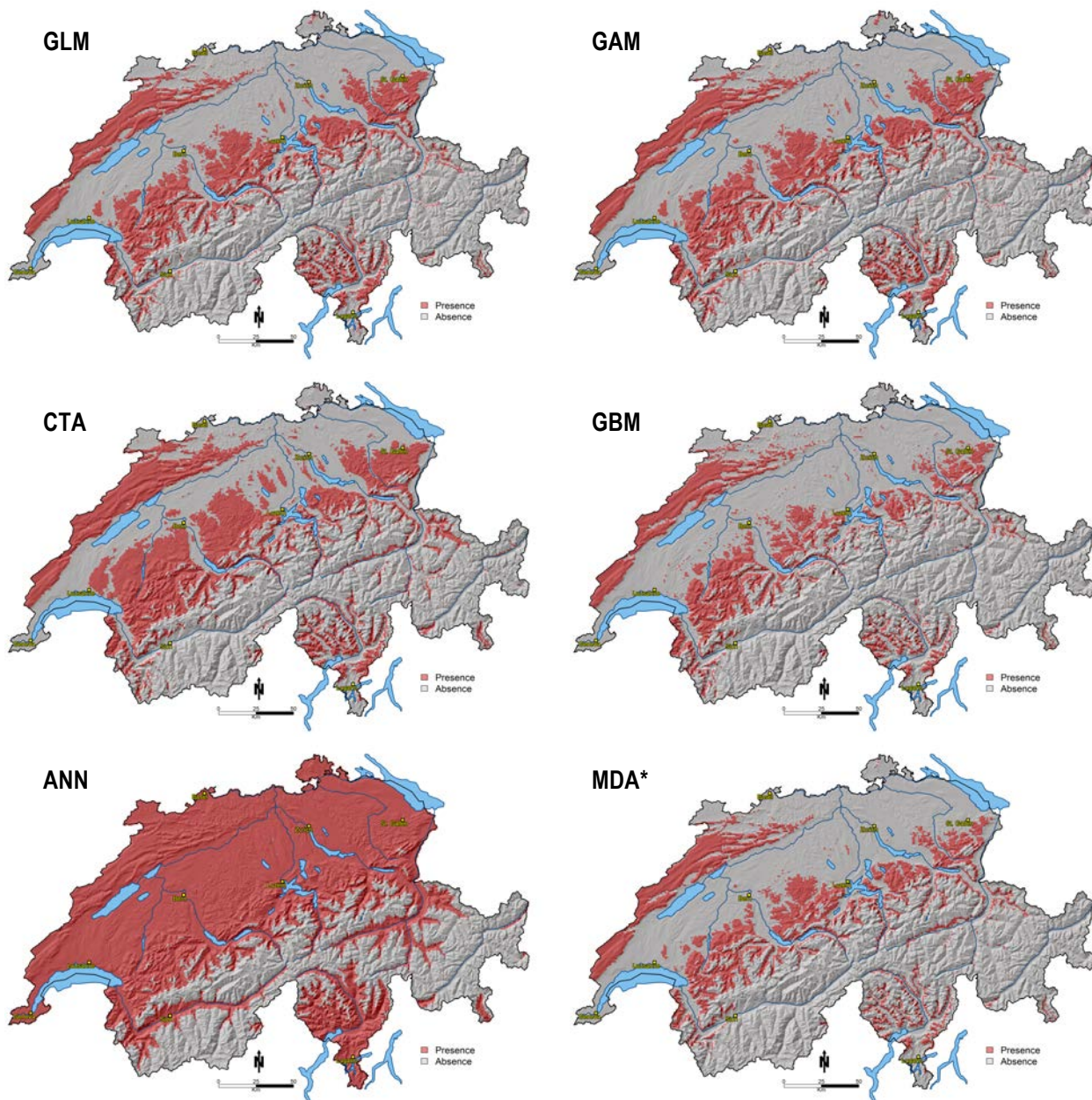
***Fagus sylvatica* – 2080 RCA30 / ECHAM5 climate**

Figure S5.19: *Fagus sylvatica* maps from single statistical models generated under above listed climate conditions.

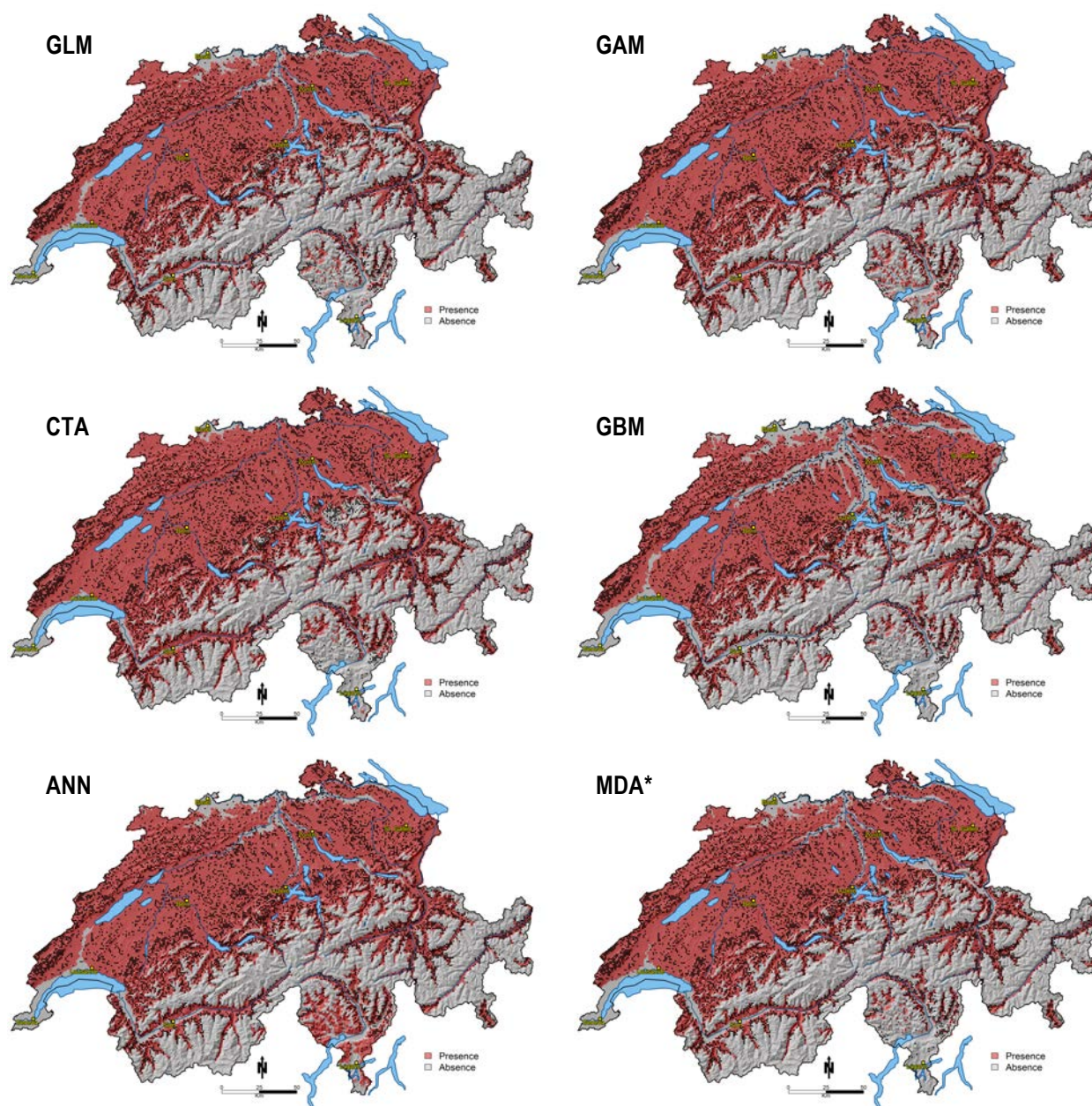
Picea abies – current climate

Figure S5.20: *Picea abies* maps from single statistical models generated under above listed climate conditions.

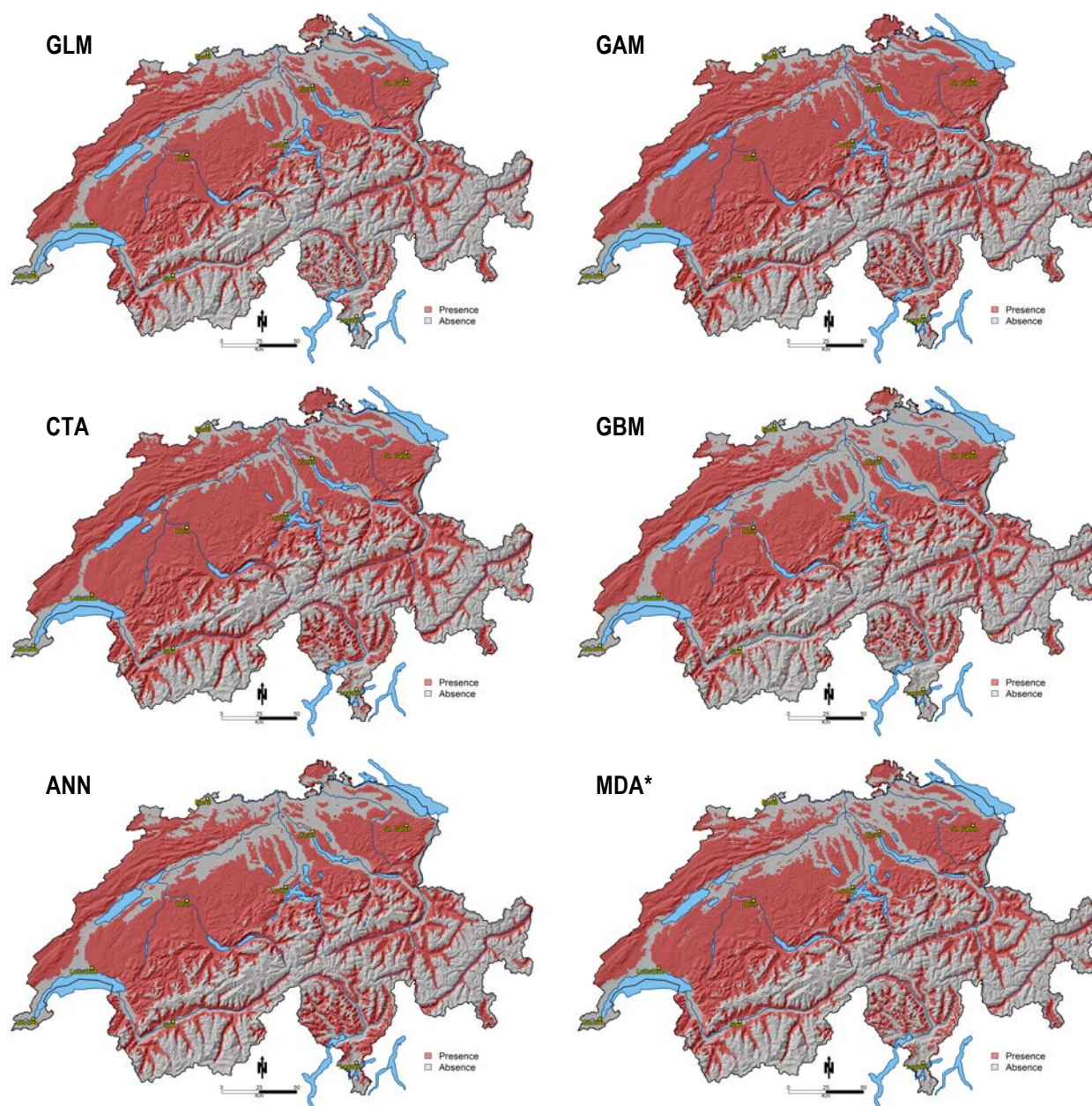
***Picea abies* – 2020 CLM / ECHAM5 climate**

Figure S5.21: *Picea abies* maps from single statistical models generated under above listed climate conditions

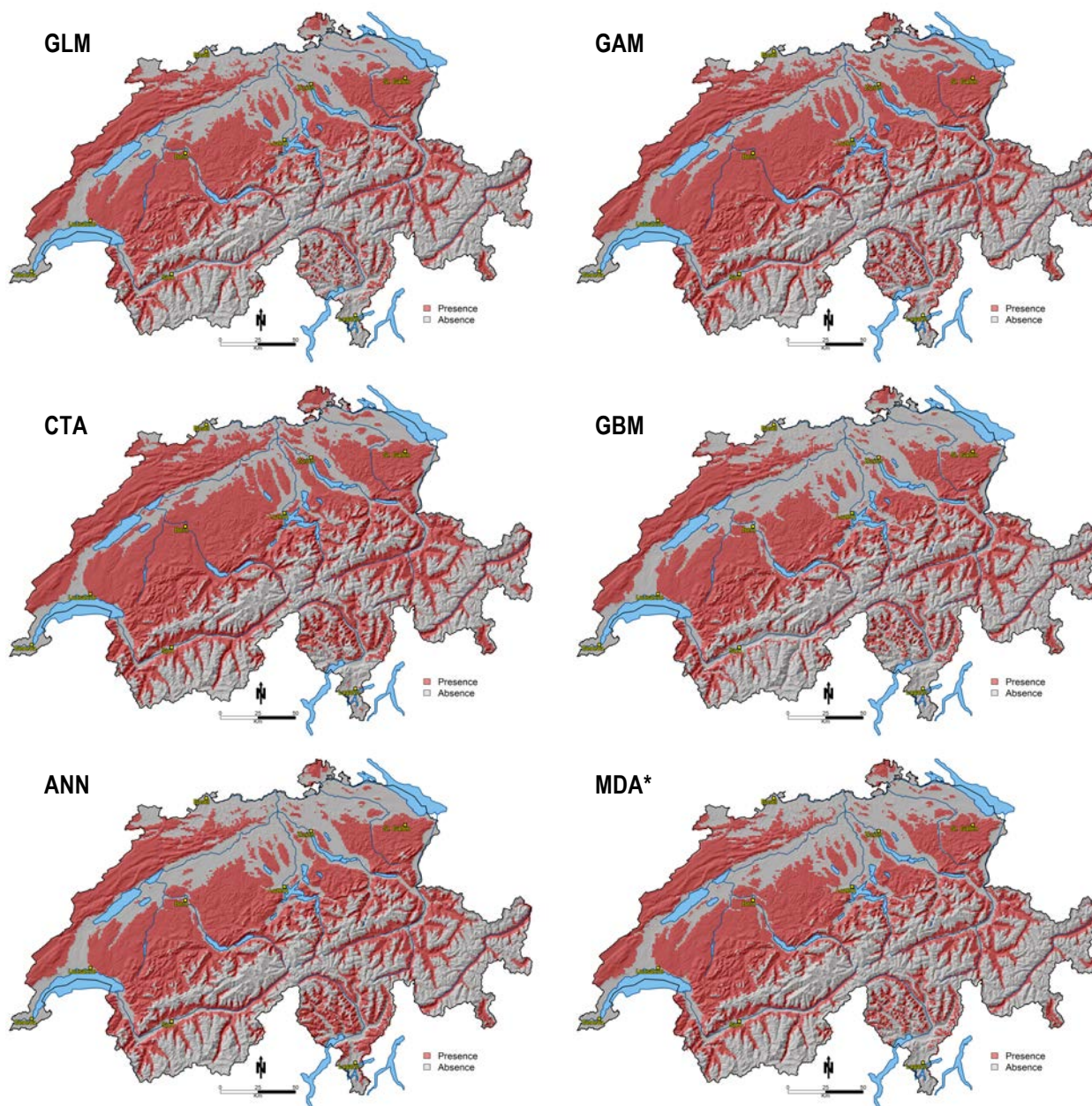
***Picea abies* – 2020 HadRM3q0 / HadCM3 climate**

Figure S5.22: *Picea abies* maps from single statistical models generated under above listed climate conditions.

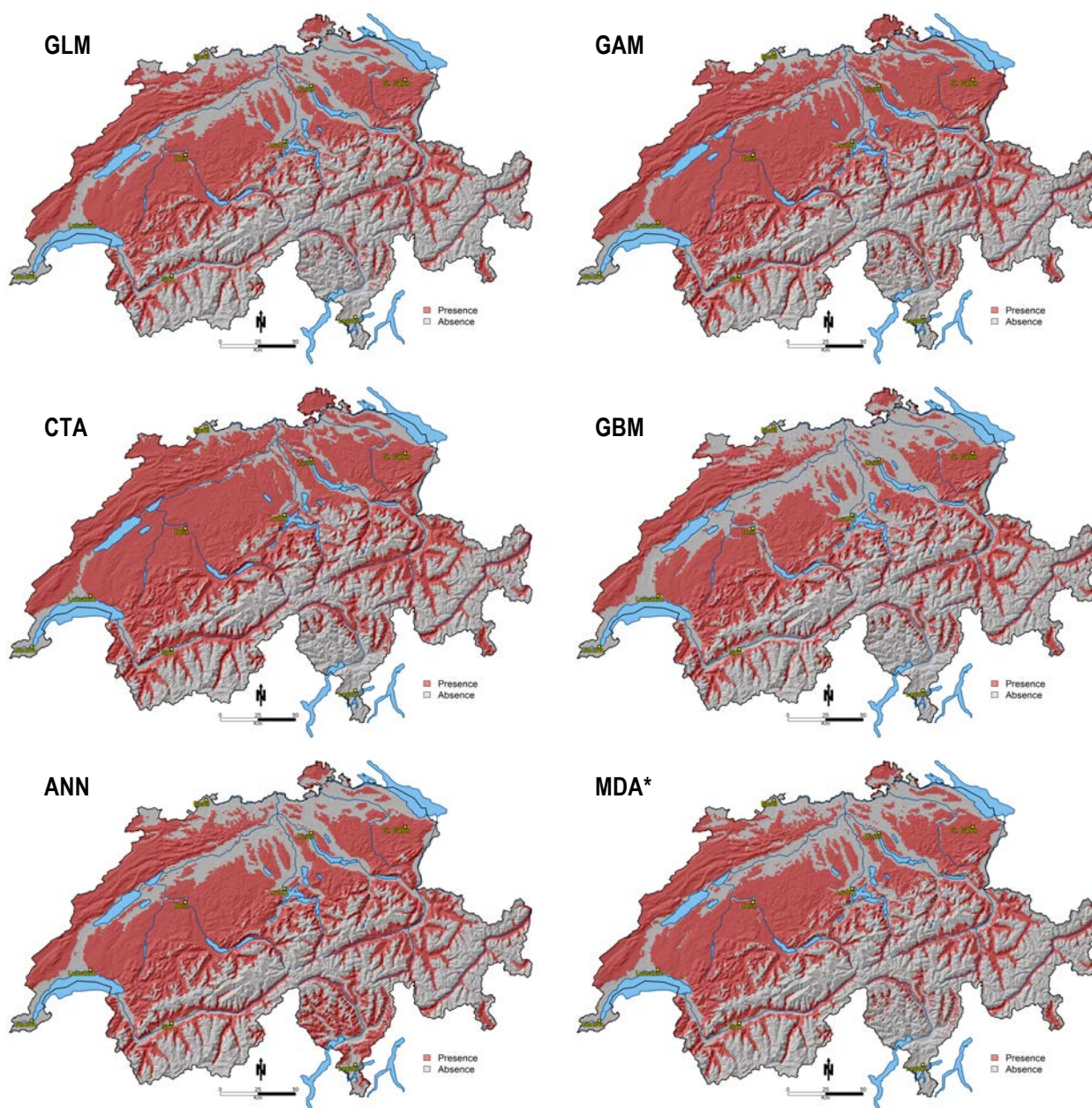
***Picea abies* – 2020 Hirham / Arpege climate**

Figure S5.23: *Picea abies* maps from single statistical models generated under above listed climate conditions.

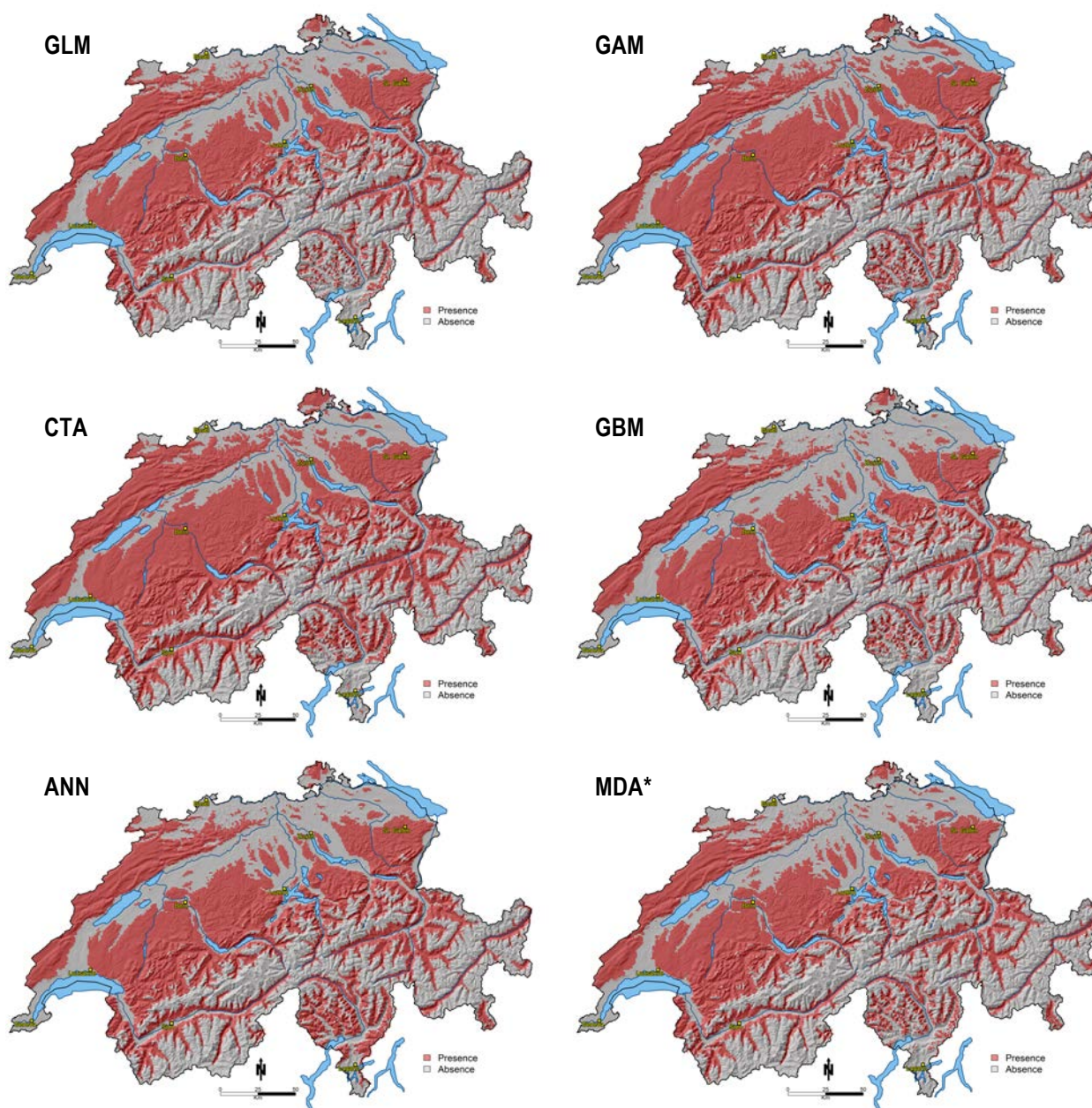
***Picea abies* – 2020 RACMO2 / ECHAM5 climate**

Figure S5.24: *Picea abies* maps from single statistical models generated under above listed climate conditions.

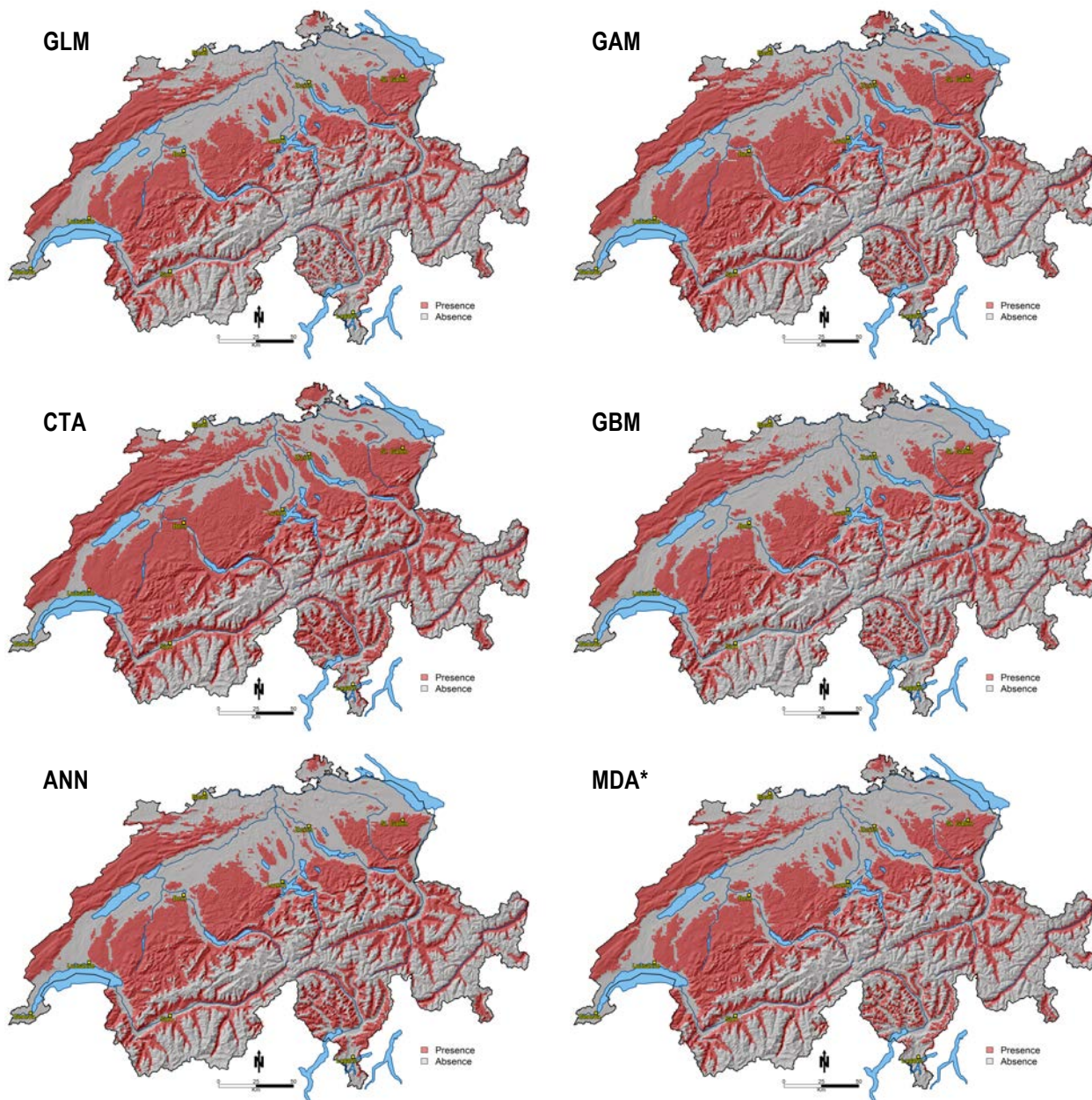
***Picea abies* – 2020 RCA / CCSM3 climate**

Figure S5.25: *Picea abies* maps from single statistical models generated under above listed climate conditions.

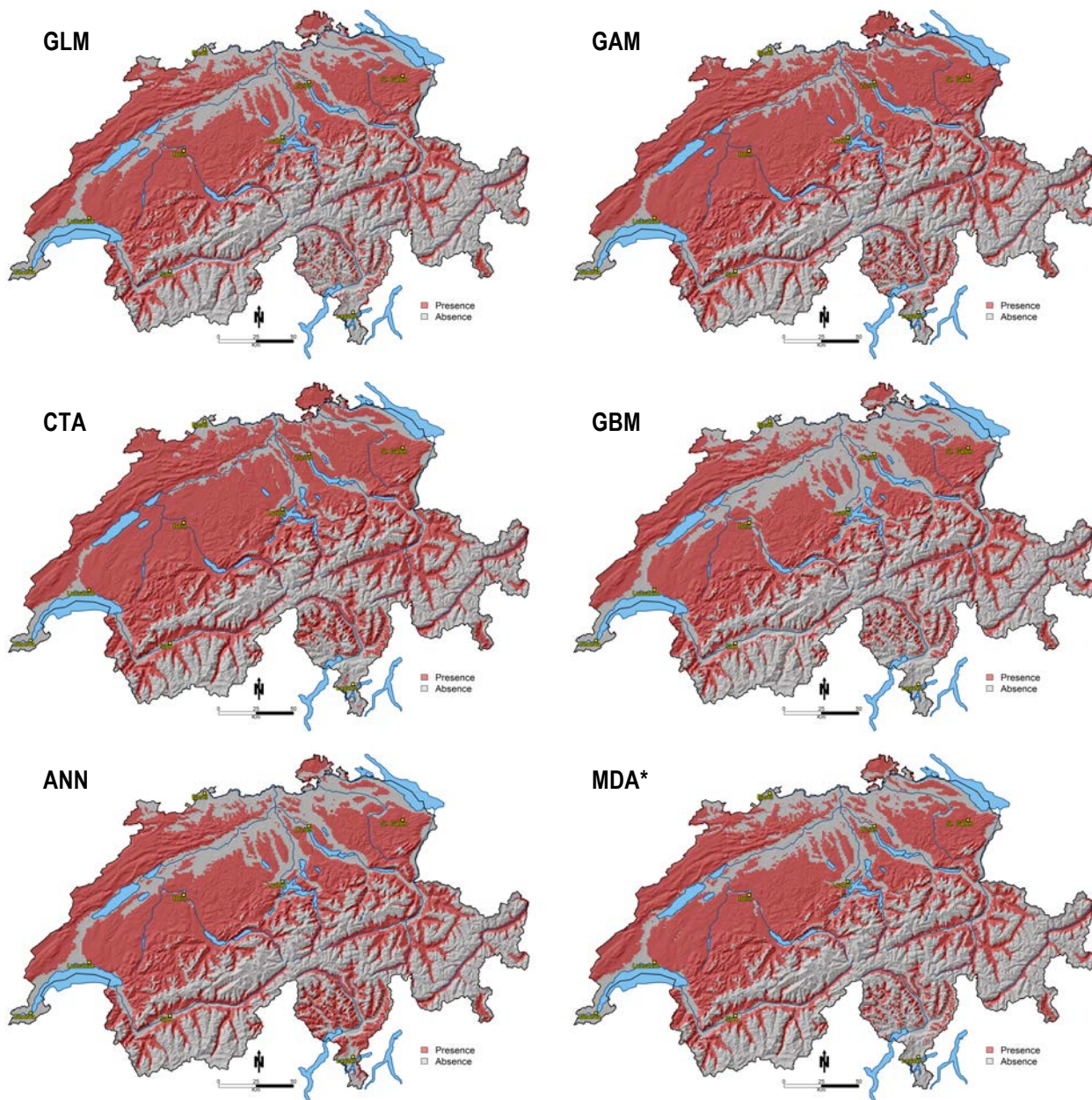
***Picea abies* – 2020 RCA30 / ECHAM5 climate**

Figure S5.26: *Picea abies* maps from single statistical models generated under above listed climate conditions.

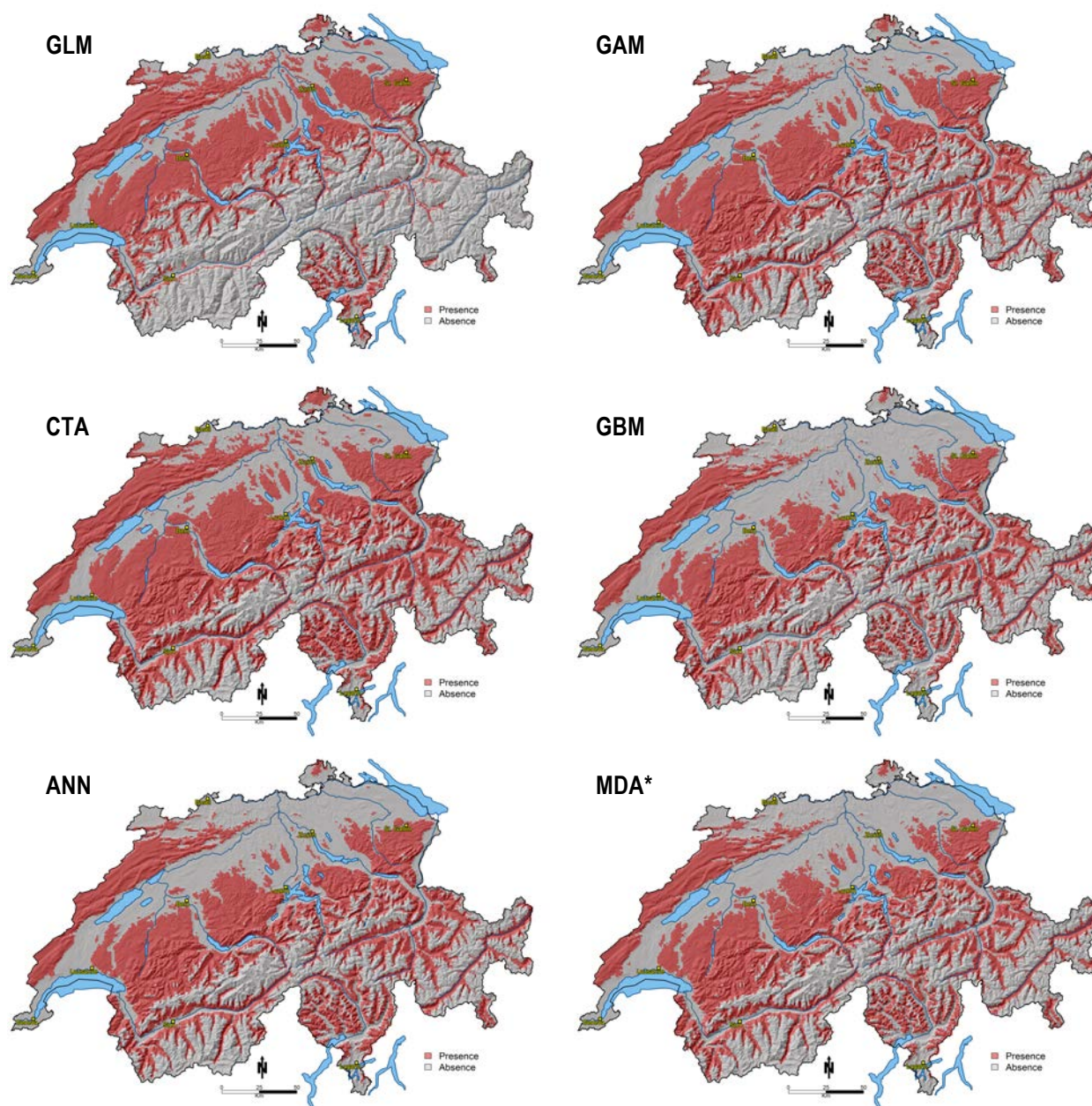
***Picea abies* – 2050 CLM / ECHAM5 climate**

Figure S5.27: *Picea abies* maps from single statistical models generated under above listed climate conditions

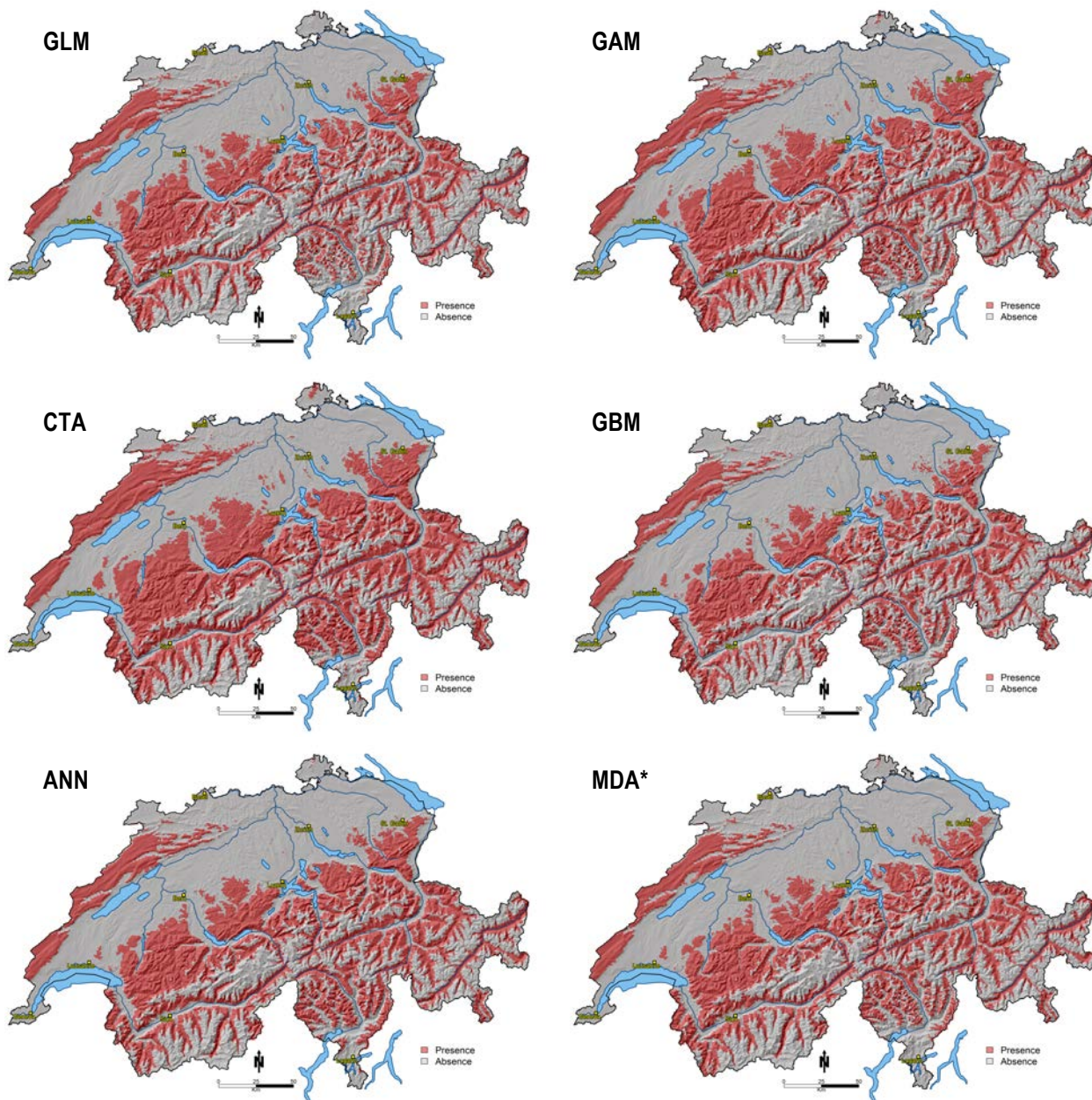
***Picea abies* – 2050 HadRM3q0 / HadCM3 climate**

Figure S5.28: *Picea abies* maps from single statistical models generated under above listed climate conditions.

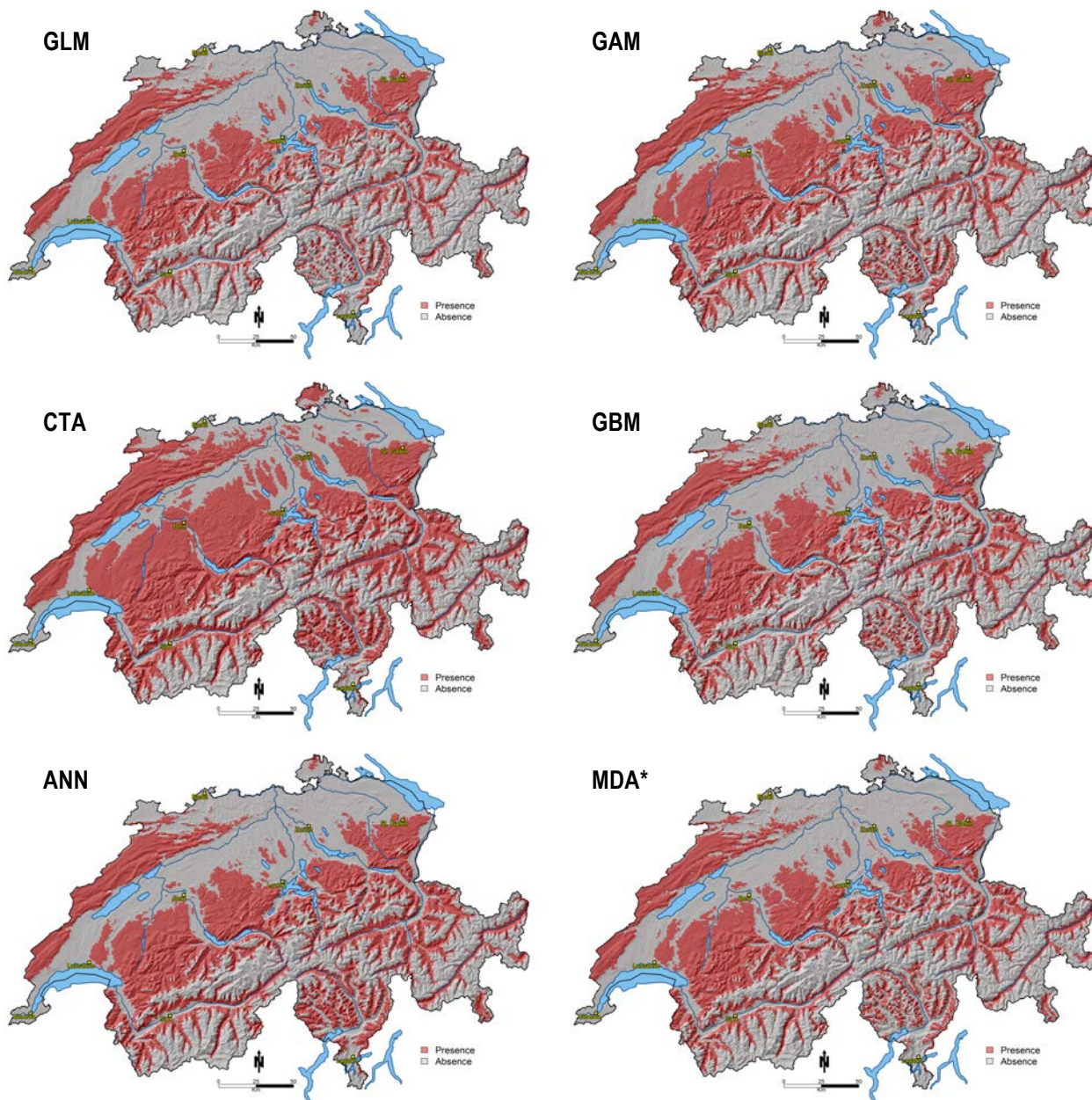
***Picea abies* – 2050 Hirham / Arpege climate**

Figure S5.29: *Picea abies* maps from single statistical models generated under above listed climate conditions.

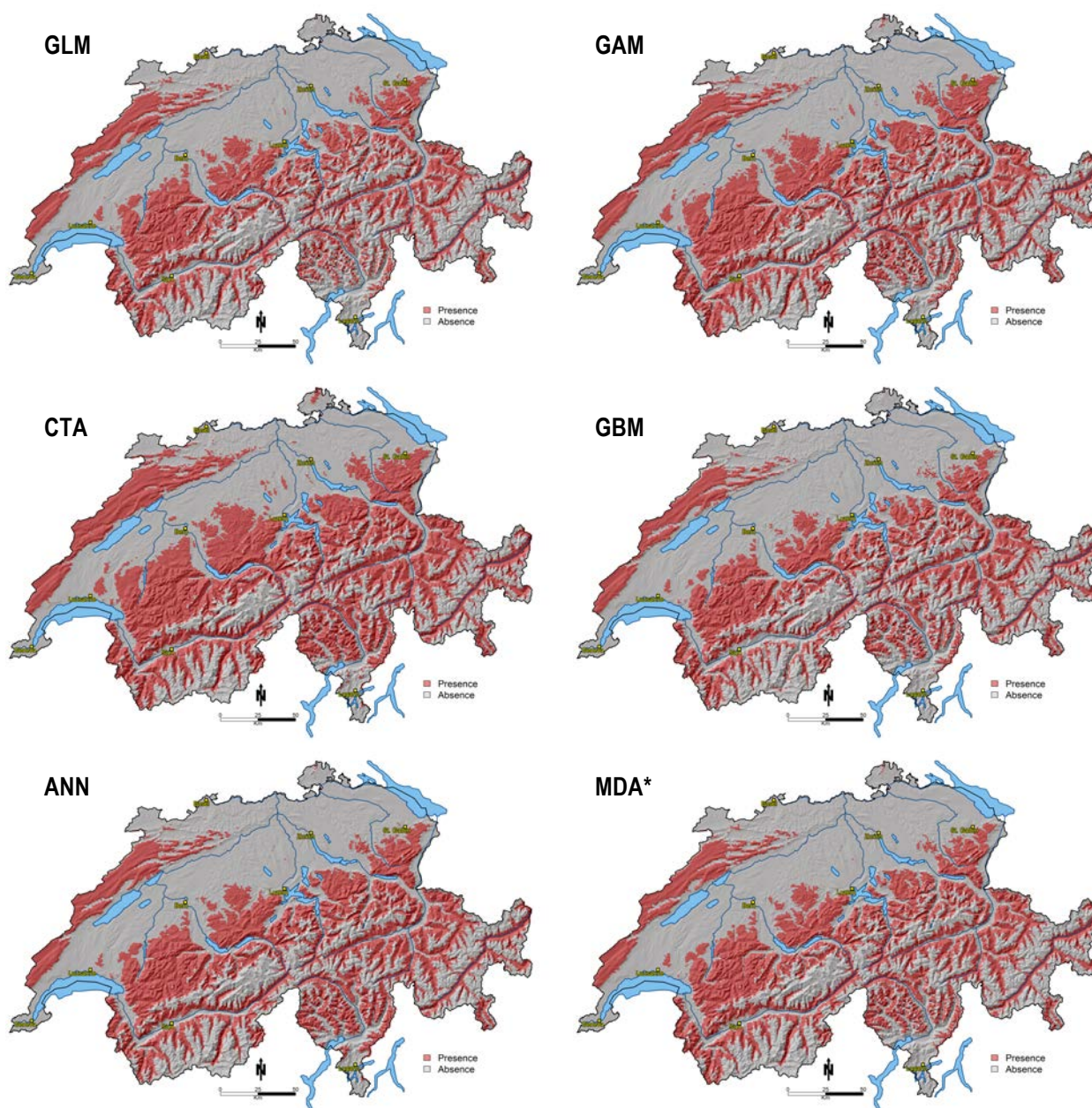
***Picea abies* – 2050 RACMO2 / ECHAM5 climate**

Figure S5.30: *Picea abies* maps from single statistical models generated under above listed climate conditions.

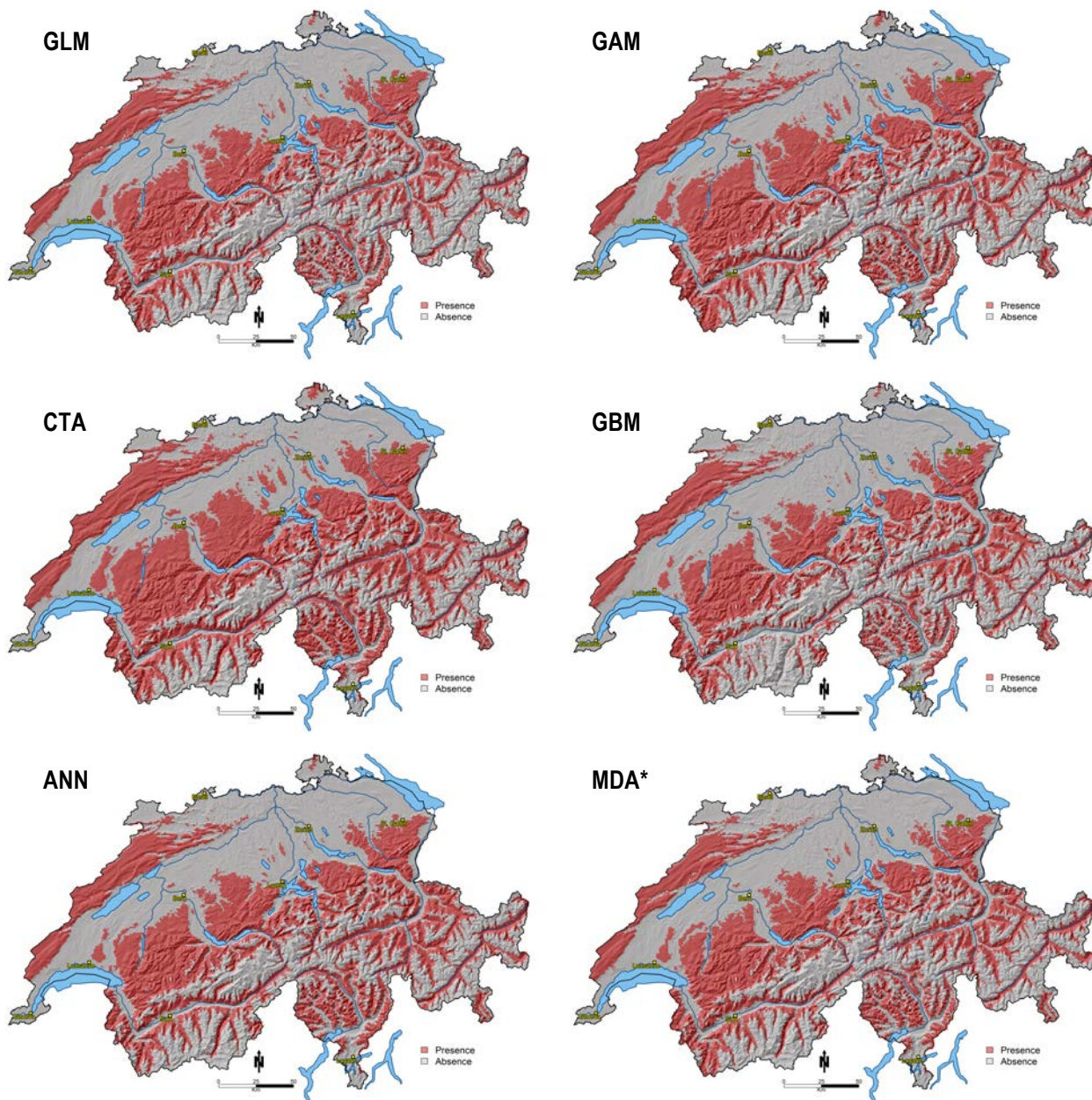
***Picea abies* – 2050 RCA / CCSM3 climate**

Figure S5.31: *Picea abies* maps from single statistical models generated under above listed climate conditions.

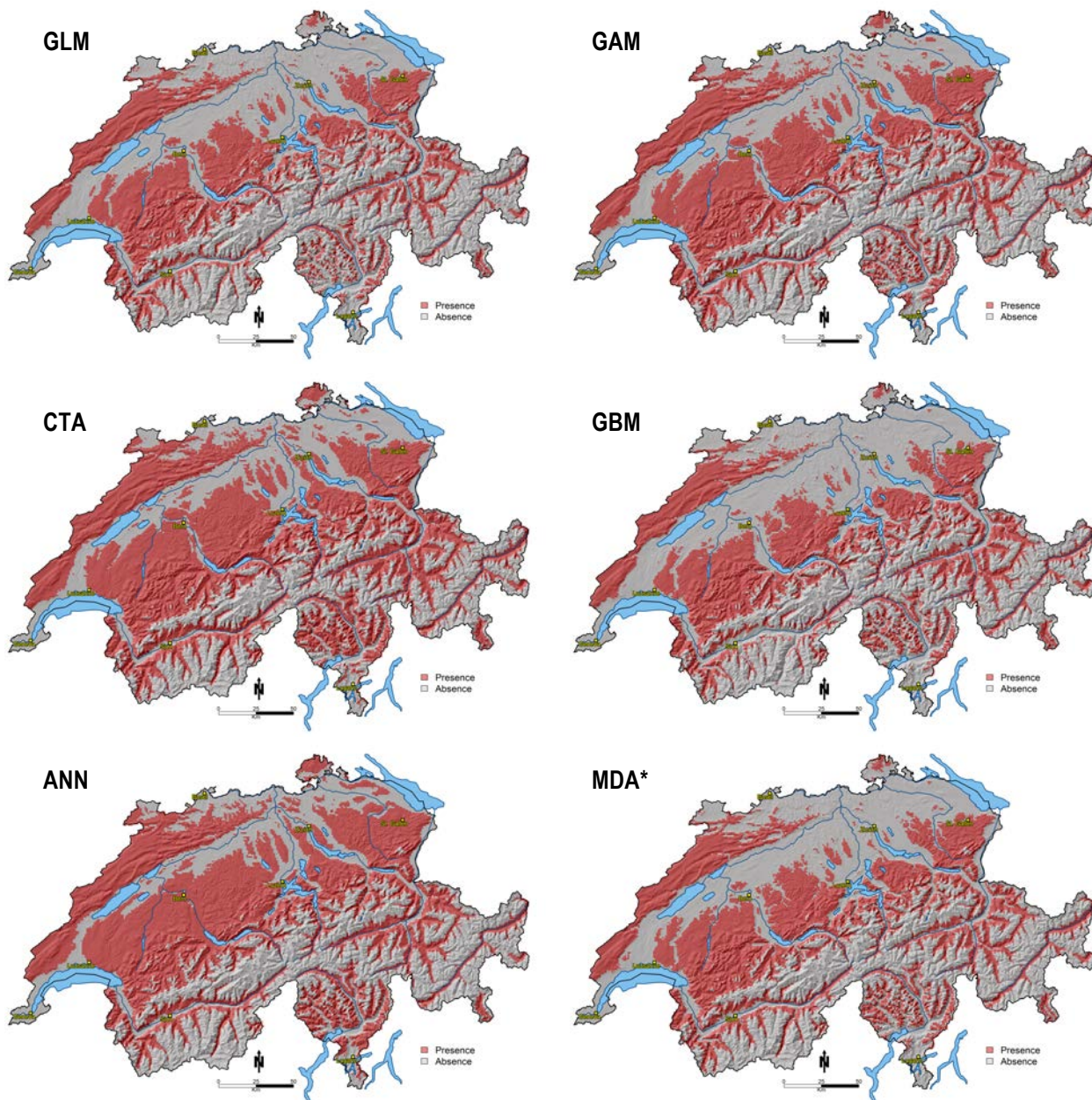
***Picea abies* – 2050 RCA30 / ECHAM5 climate**

Figure S5.32: *Picea abies* maps from single statistical models generated under above listed climate conditions.

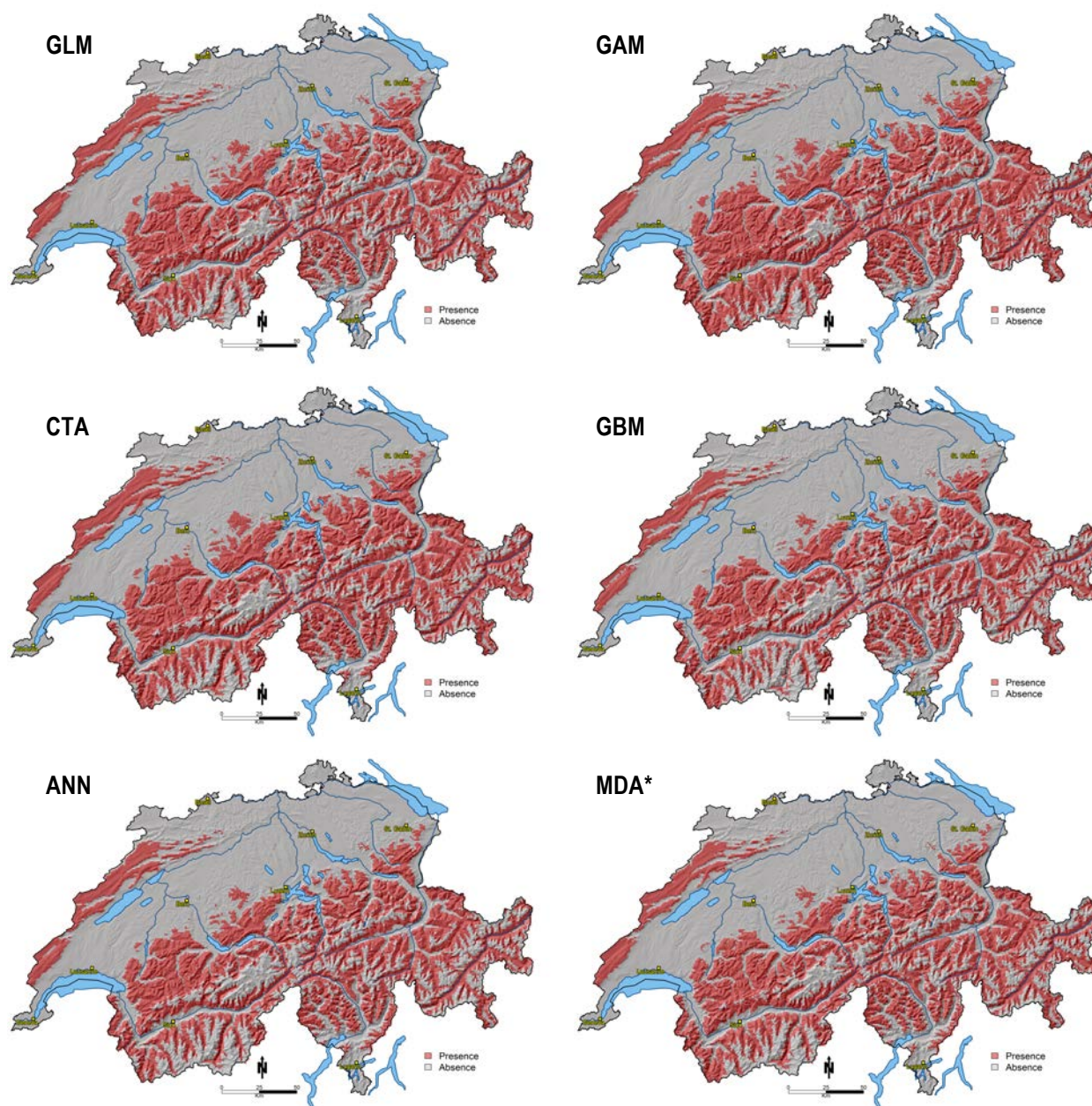
***Picea abies* – 2080 CLM / ECHAM5 climate**

Figure S5.33: *Picea abies* maps from single statistical models generated under above listed climate conditions

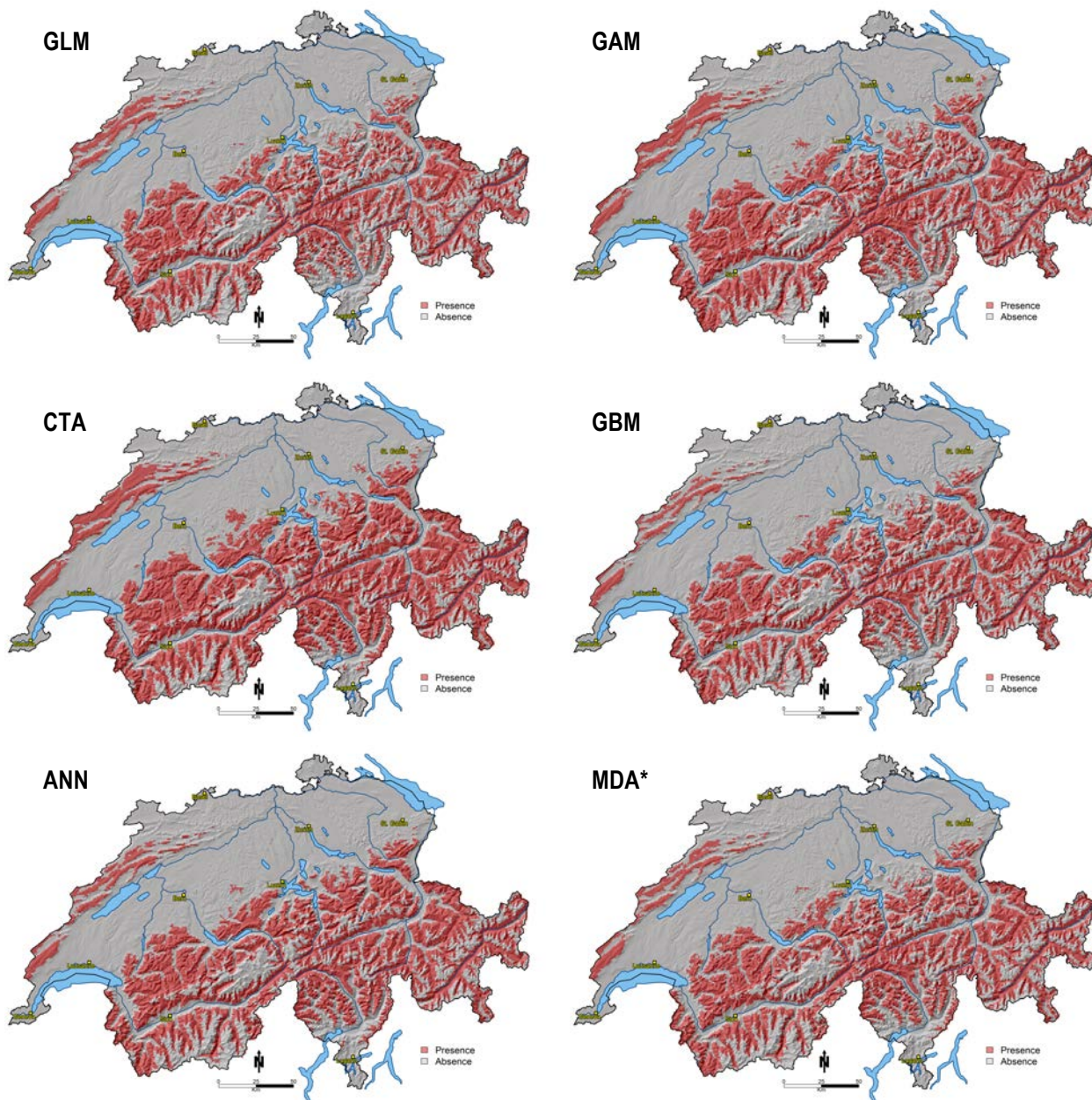
***Picea abies* – 2080 HadRM3q0 / HadCM3 climate**

Figure S5.34: *Picea abies* maps from single statistical models generated under above listed climate conditions.

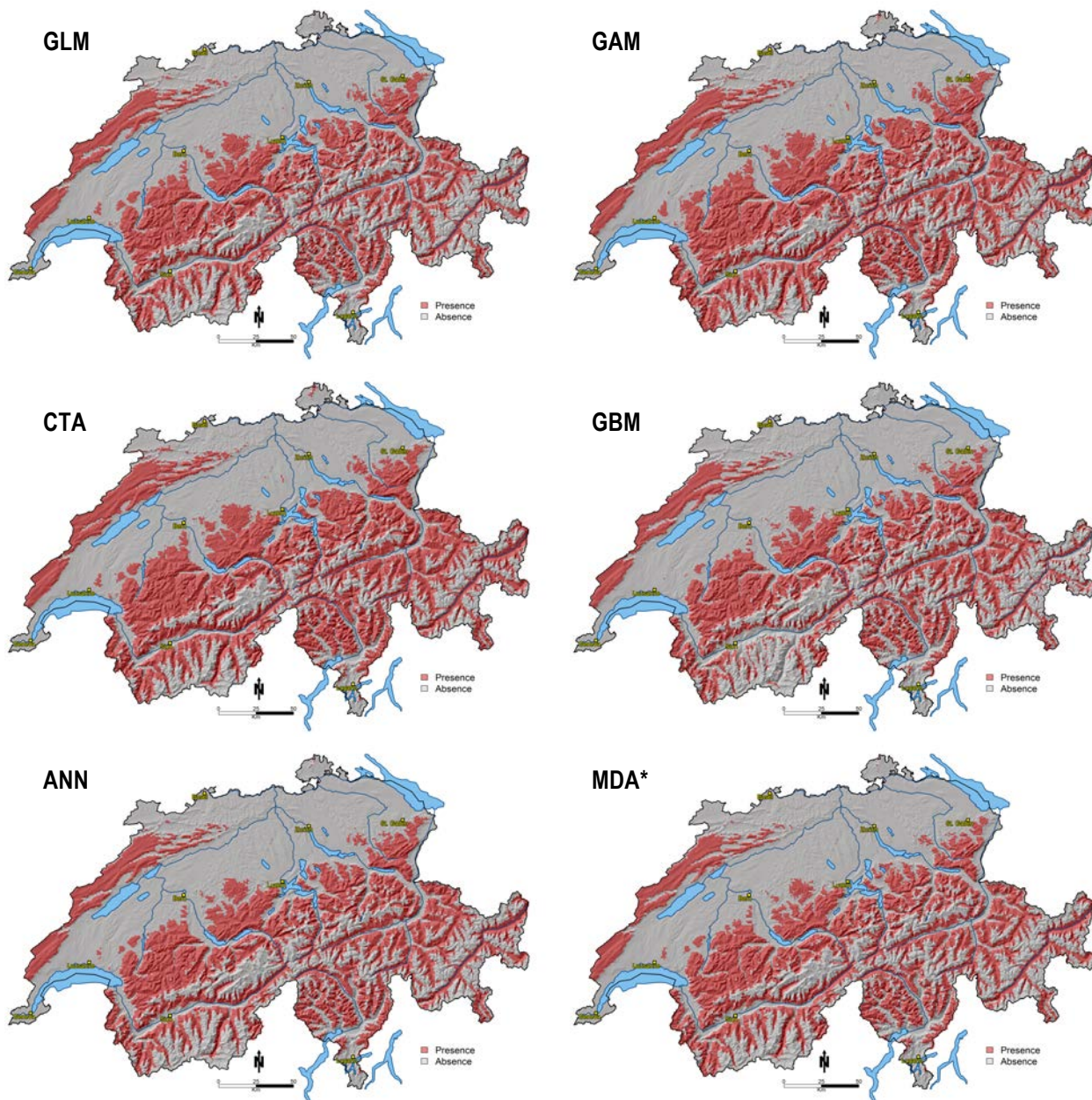
***Picea abies* – 2080 Hirham / Arpege climate**

Figure S5.35: *Picea abies* maps from single statistical models generated under above listed climate conditions.

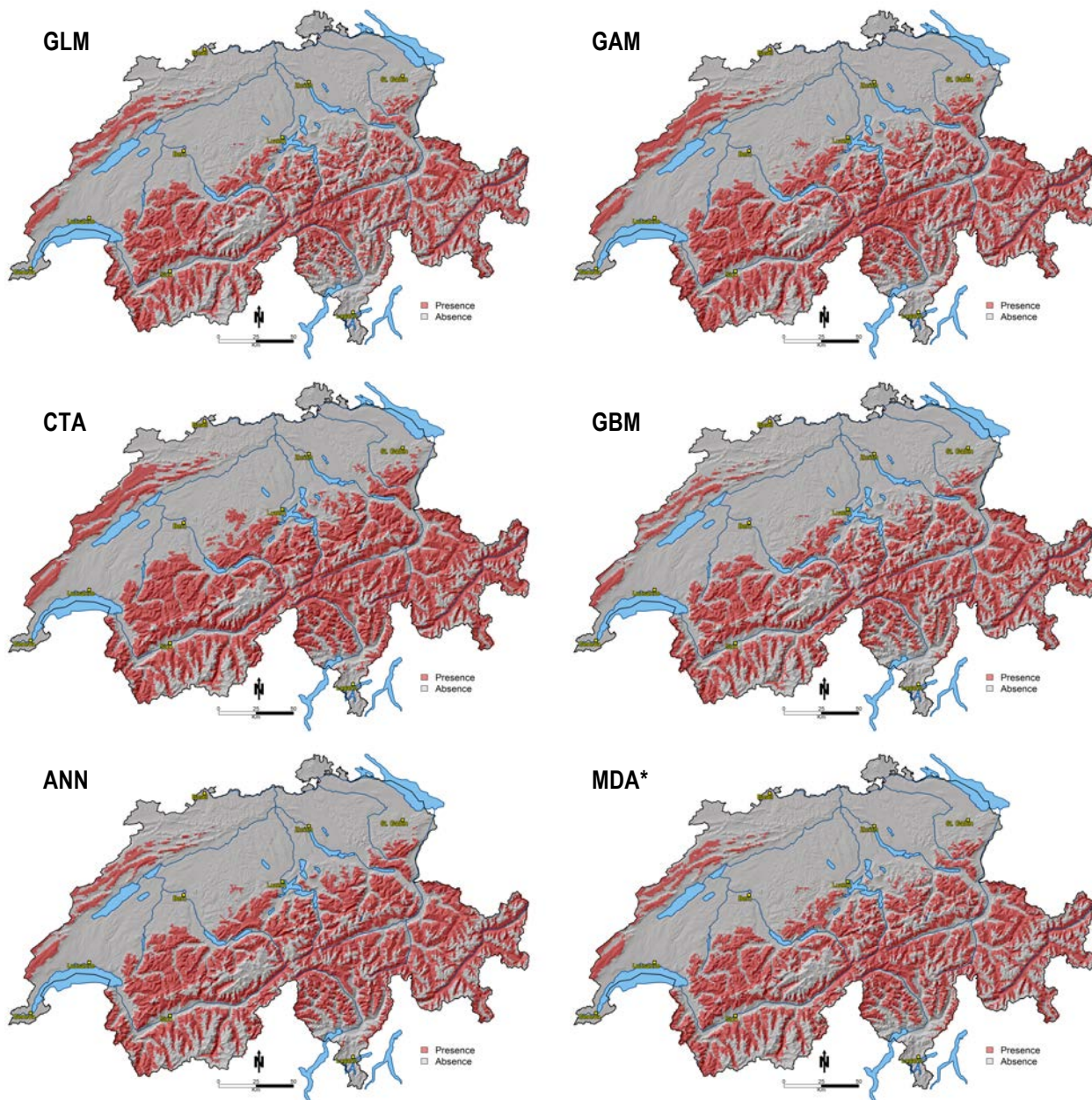
***Picea abies* – 2080 RACMO2 / ECHAM5 climate**

Figure S5.36: *Picea abies* maps from single statistical models generated under above listed climate conditions.

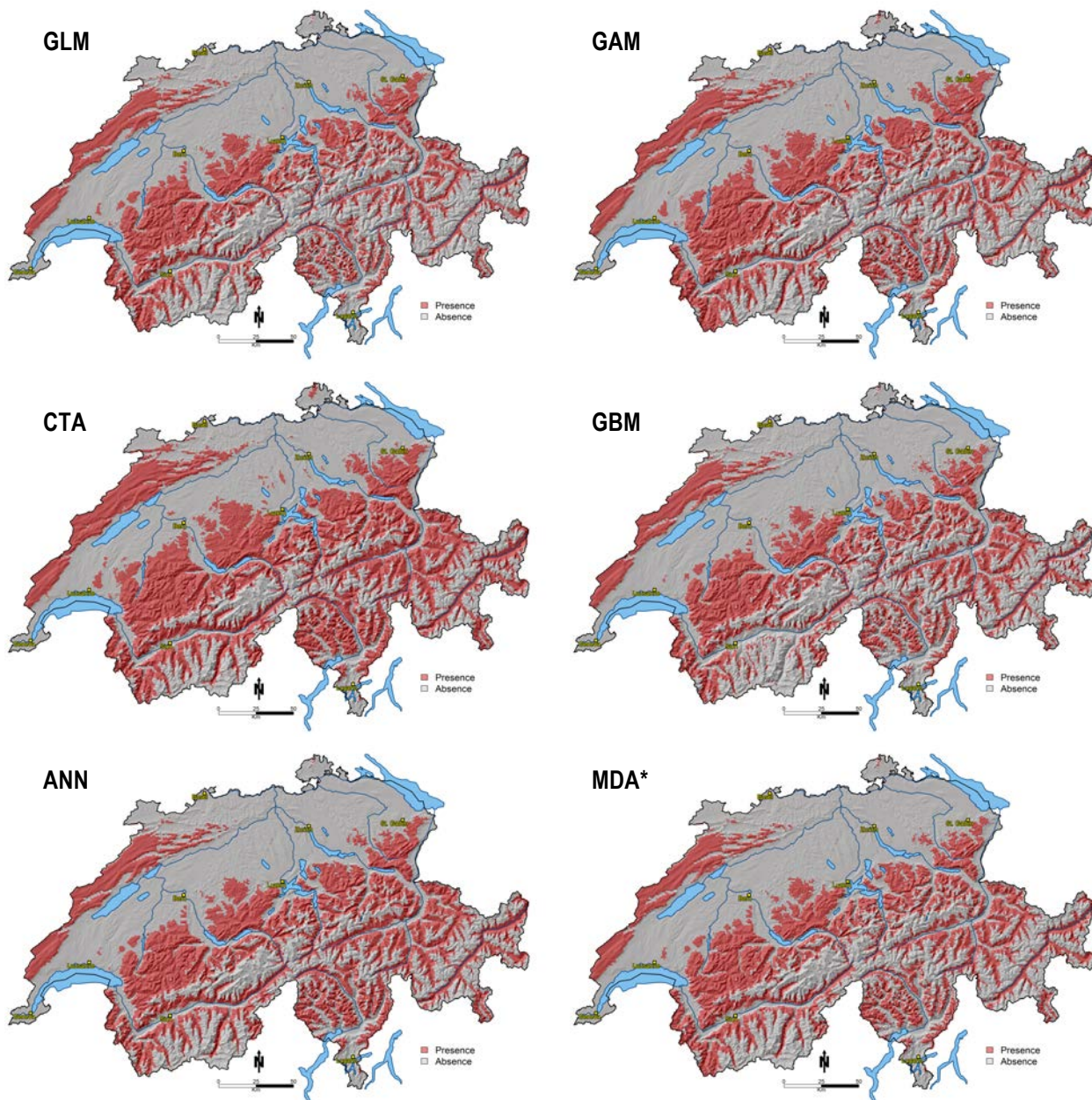
***Picea abies* – 2080 RCA / CCSM3 climate**

Figure S5.37: *Picea abies* maps from single statistical models generated under above listed climate conditions.

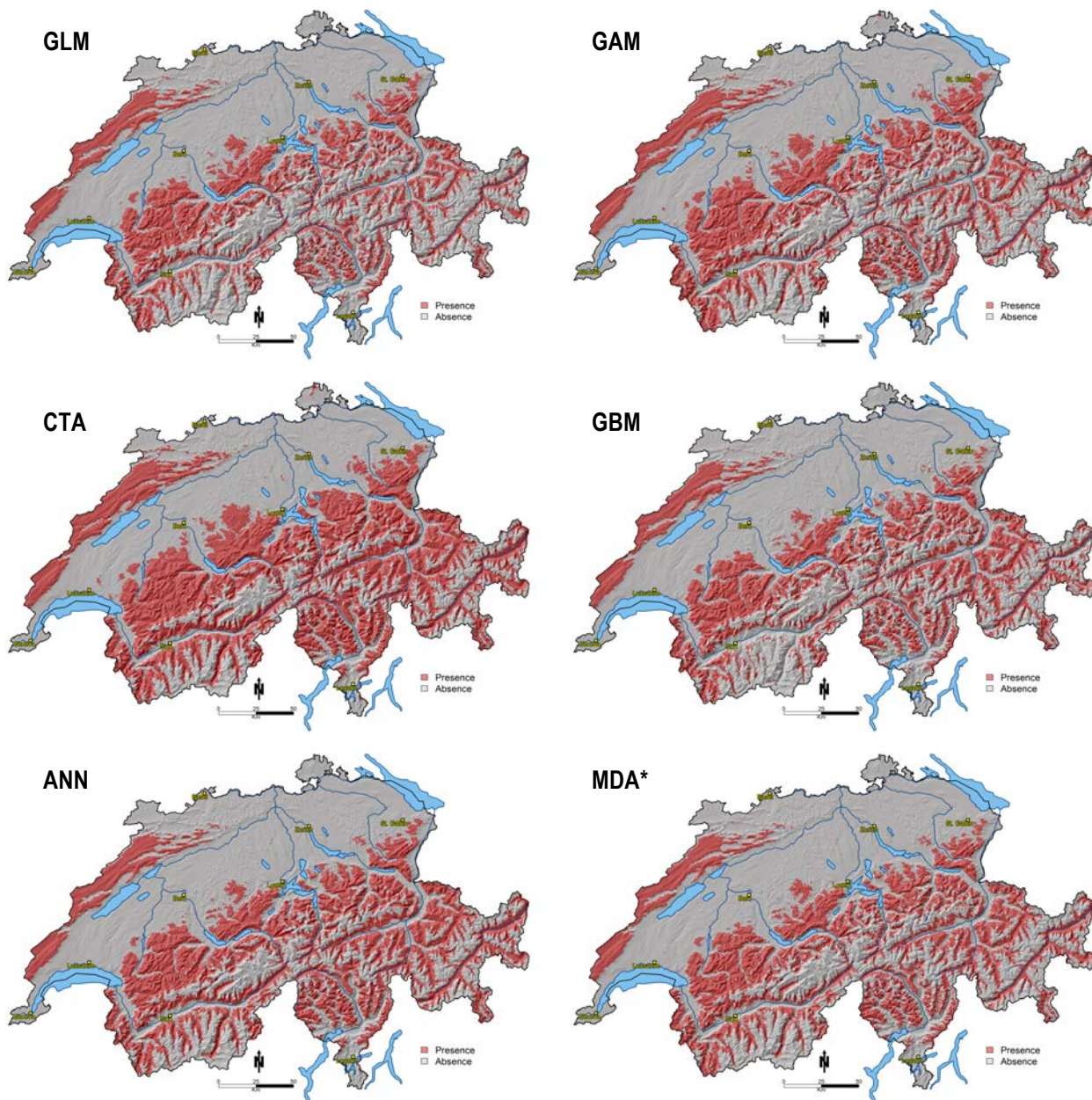
***Picea abies* – 2080 RCA30 / ECHAM5 climate**

Figure S5.38: *Picea abies* maps from single statistical models generated under above listed climate conditions.