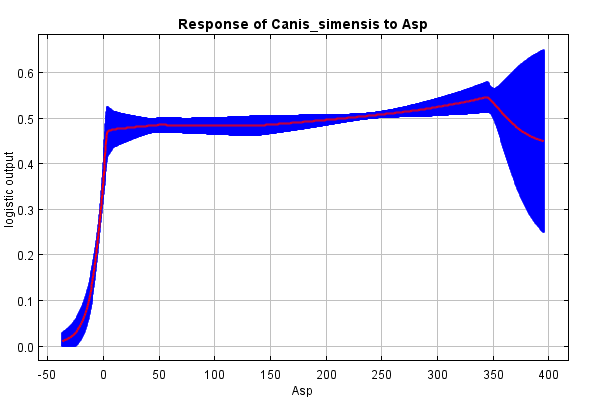
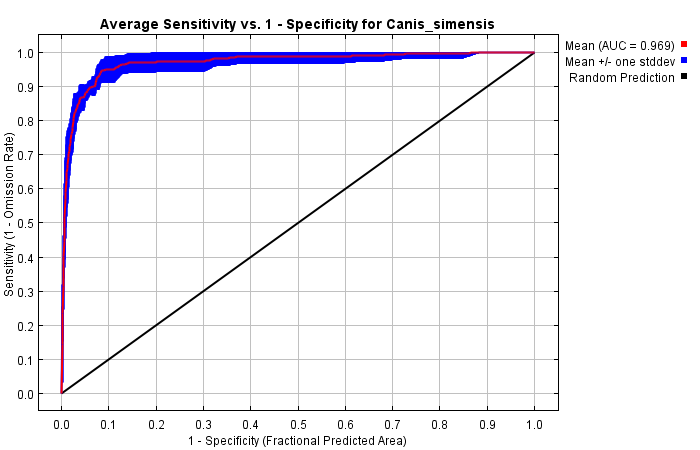
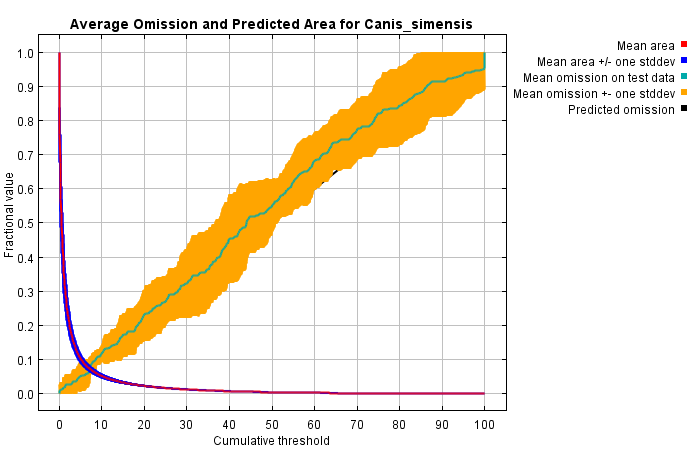
**Supplementary file**



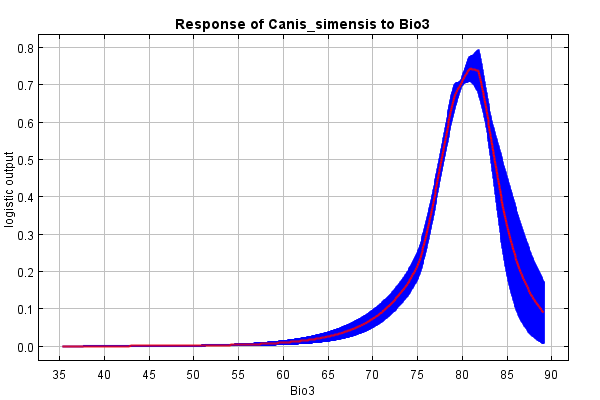
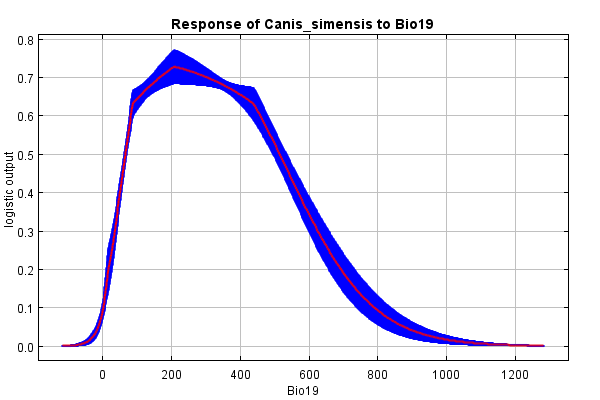
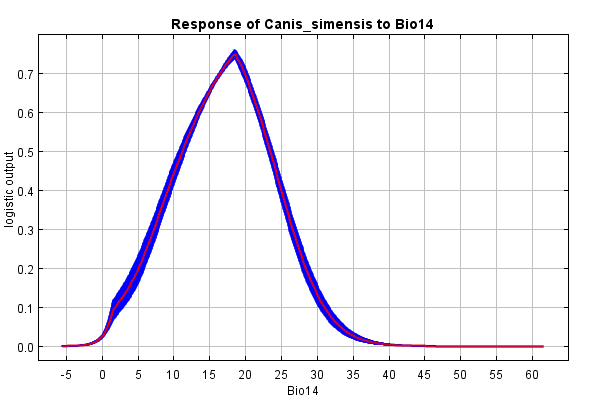
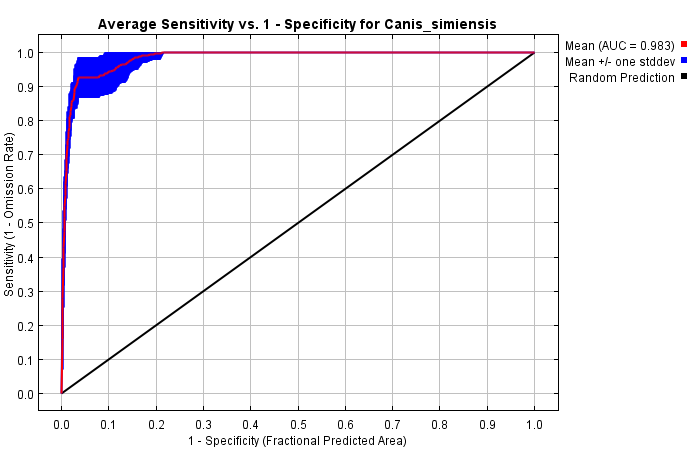
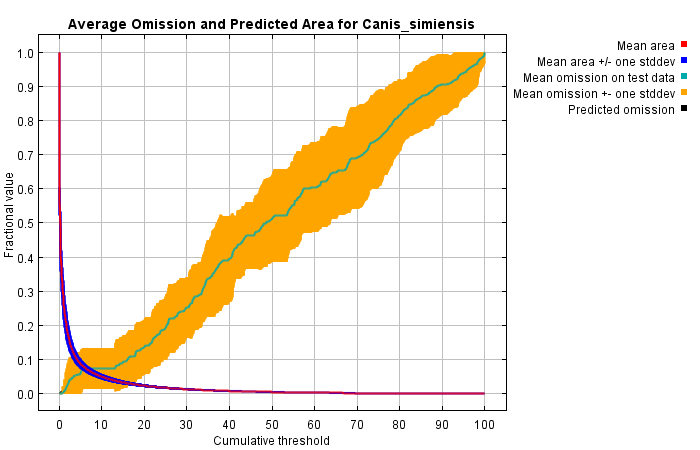
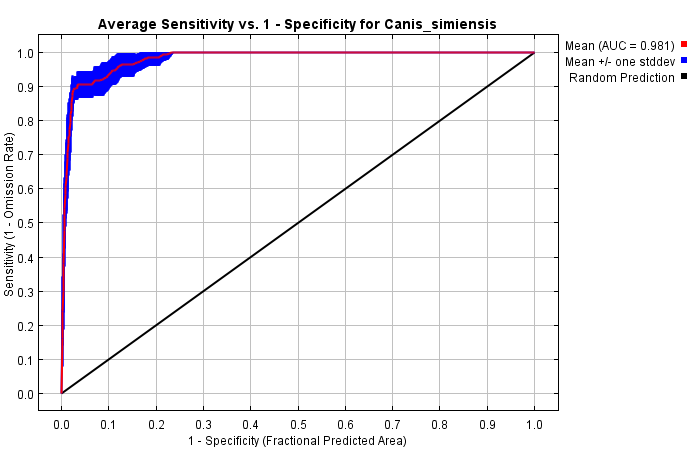
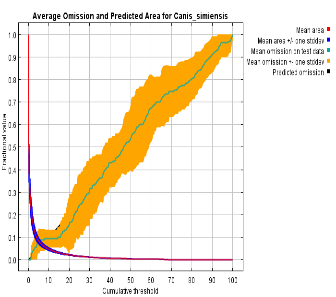


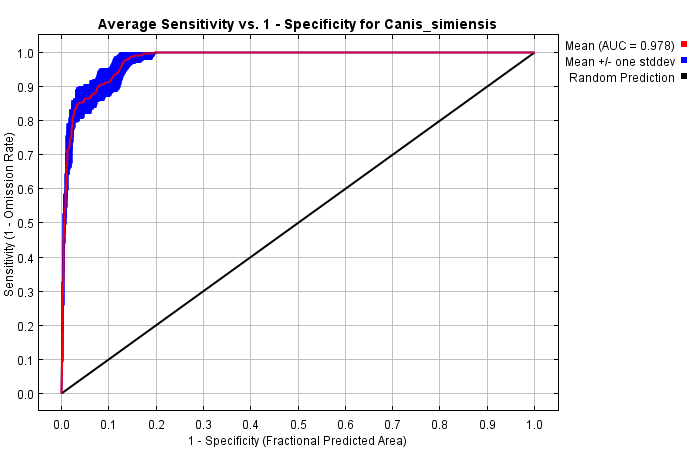
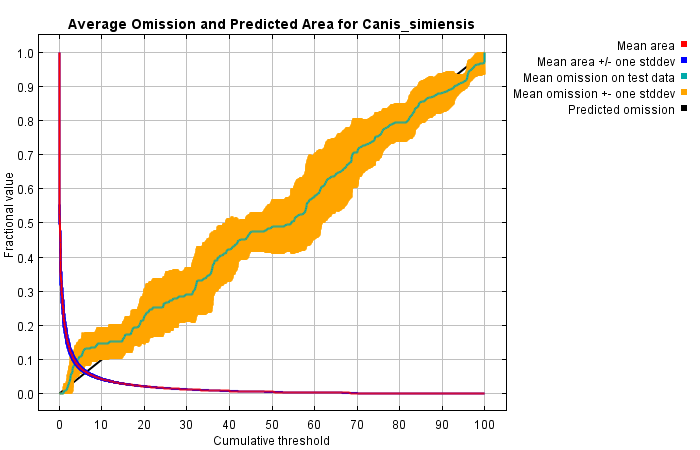
Figure S1. Current test omission rate response curve used for modelling



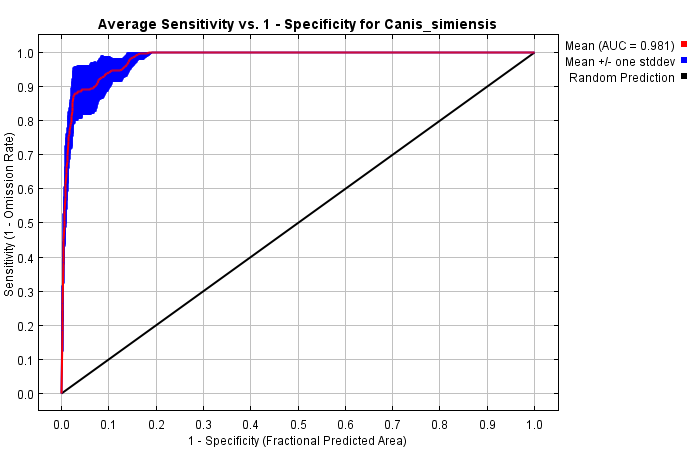
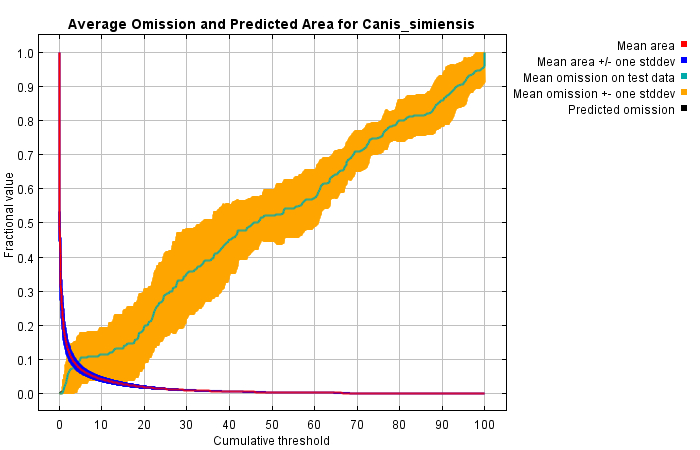
1. BCC-CSM5 2050 2.6



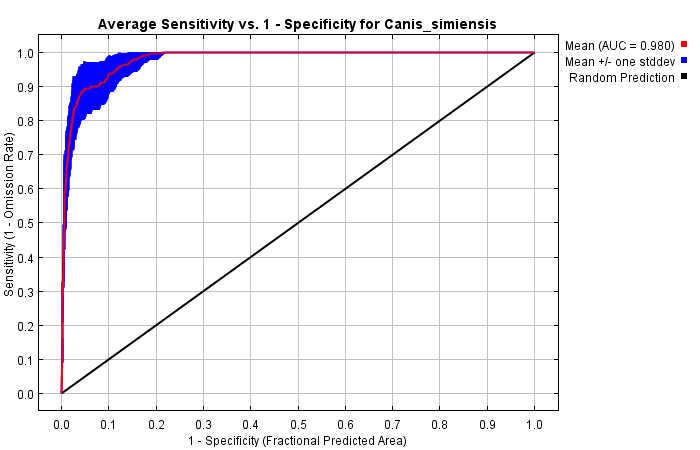
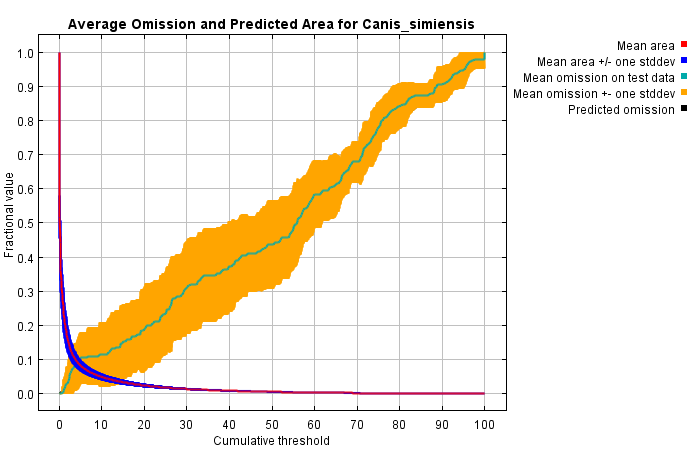
1. BCC-CSM5 2050 4.5



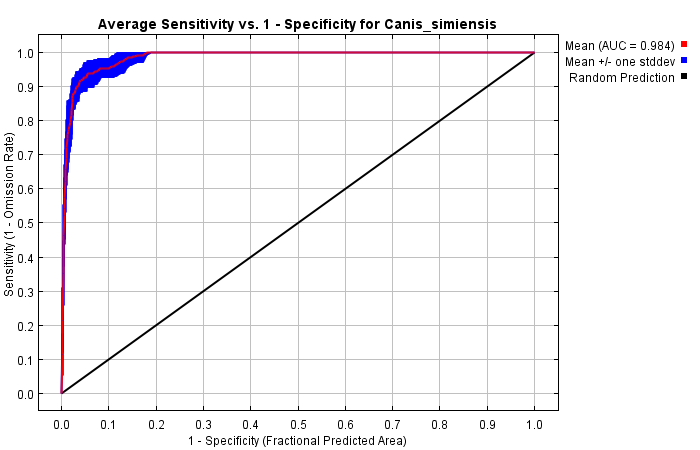
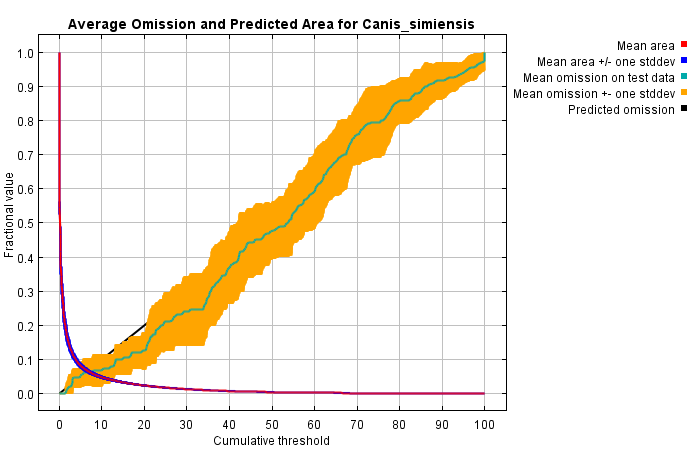
1. BCC-CSM5 2050 8.5



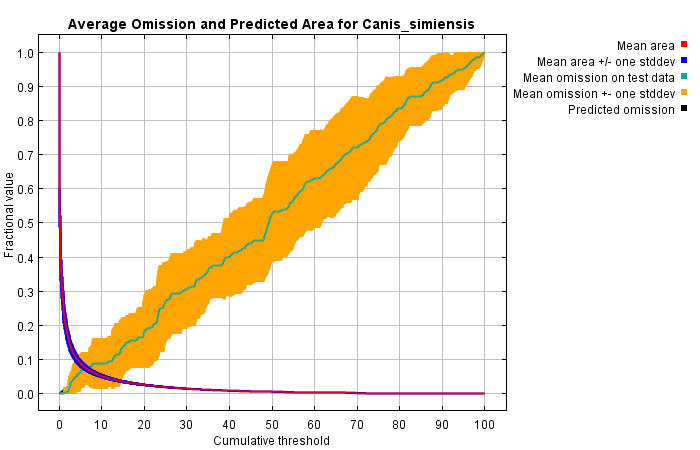
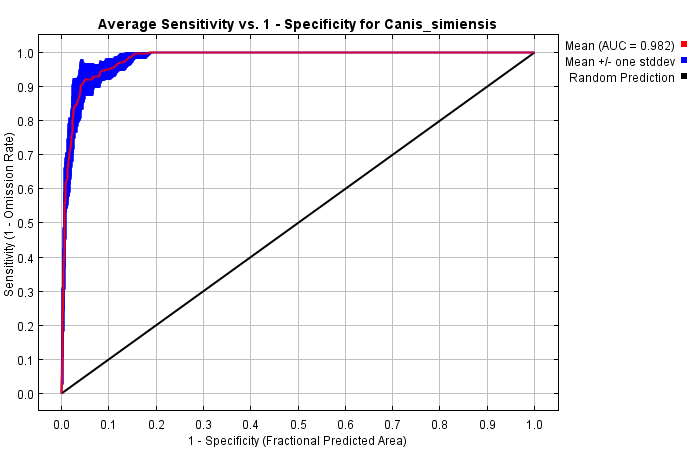
1. BCC-CSM5 2070 2.6



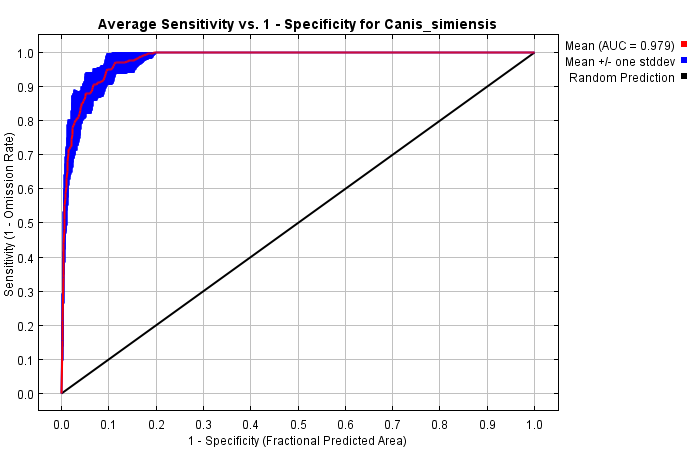
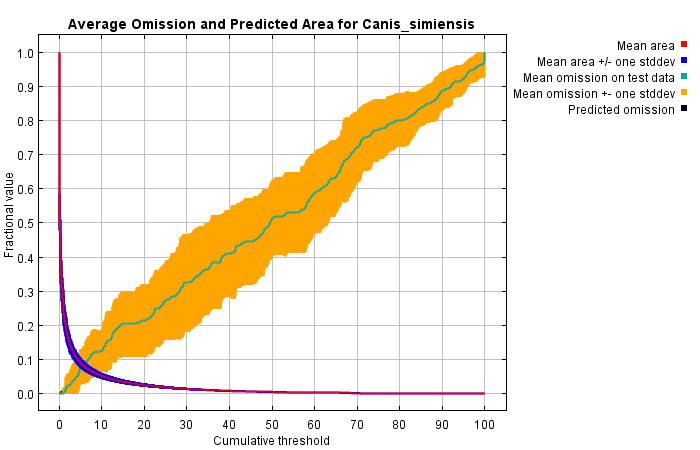
1. BCC-CSM5 2070 4.5



1. BCC-CSM5 2070 8.5

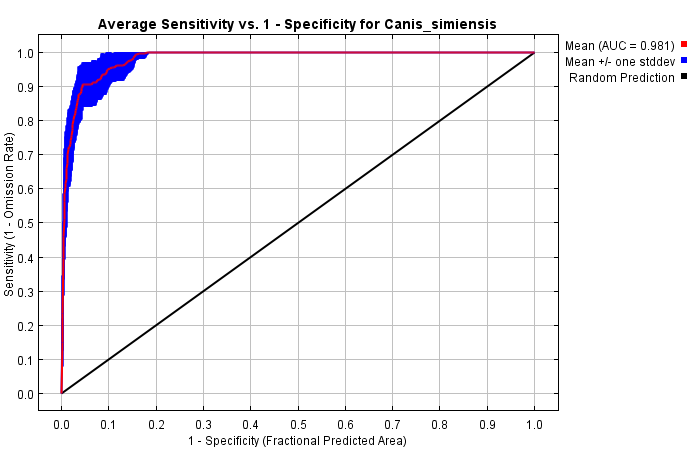
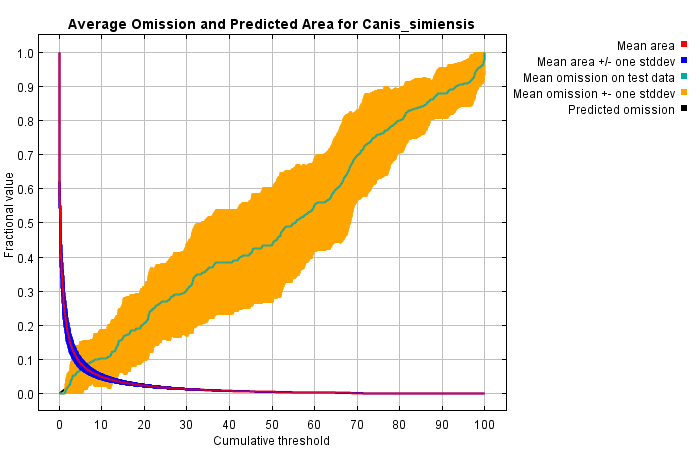
 

h. CanESM 2050 2.6

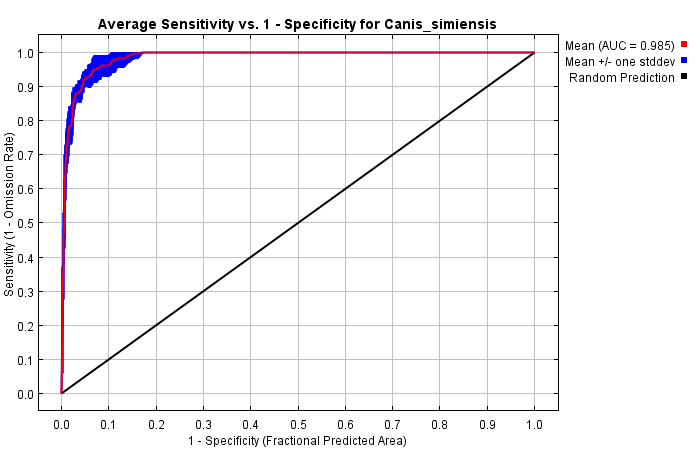
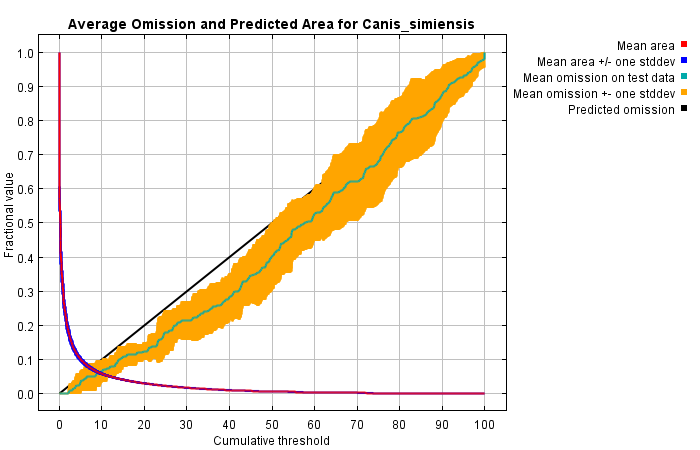


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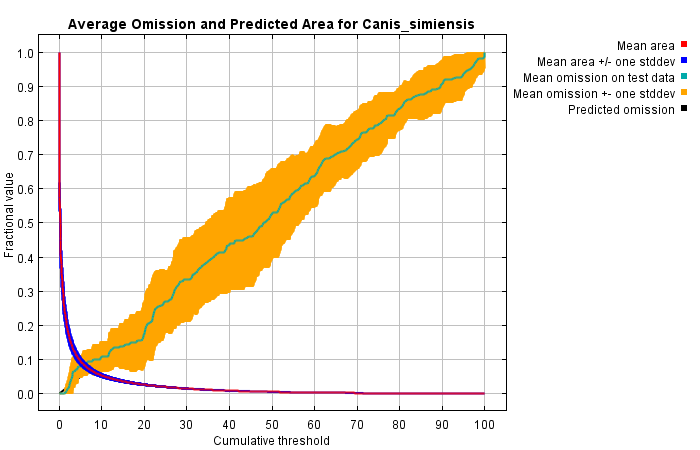
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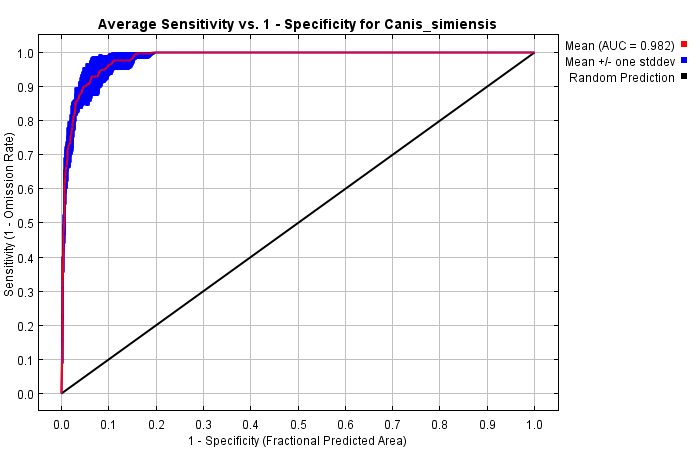
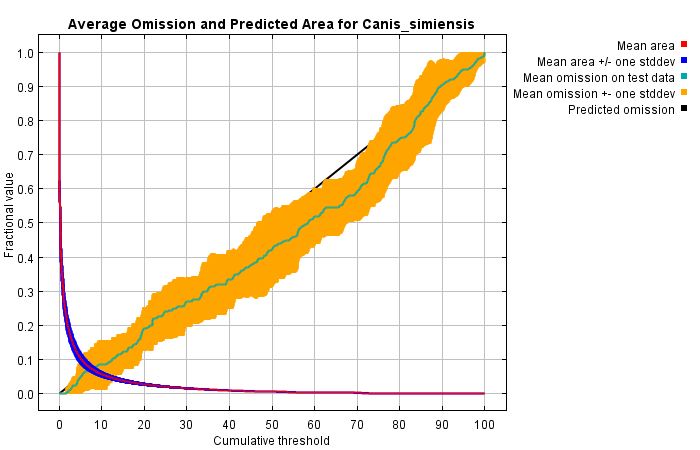
j. CanESM 2050 8.5



k. CanESM 2070 2.6

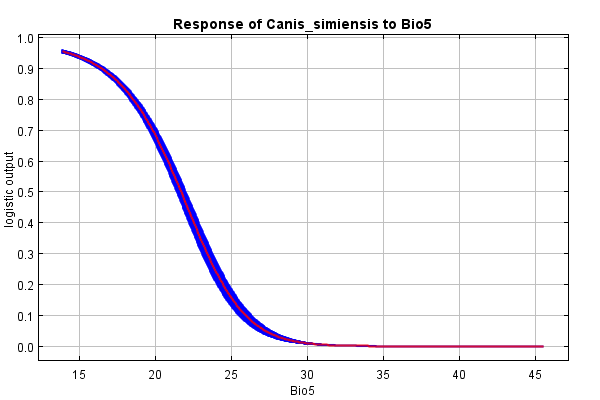
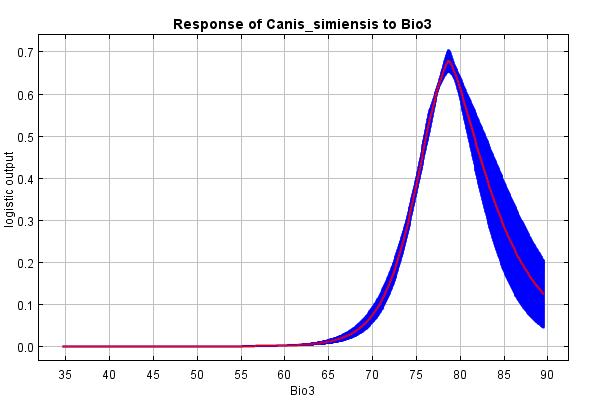
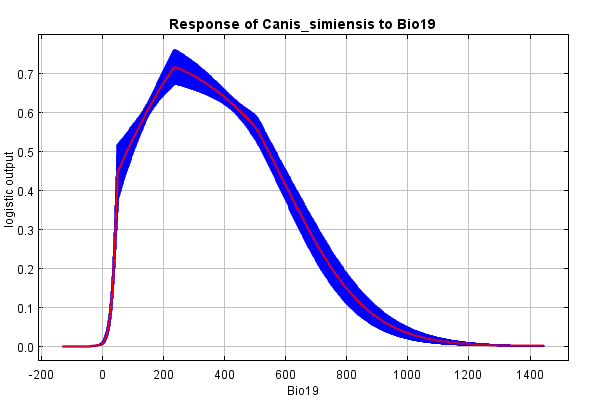
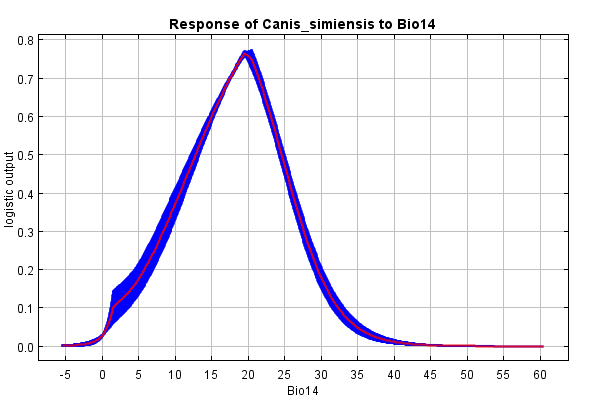


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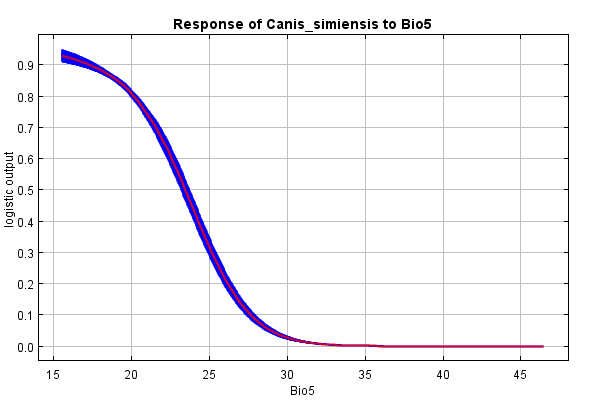
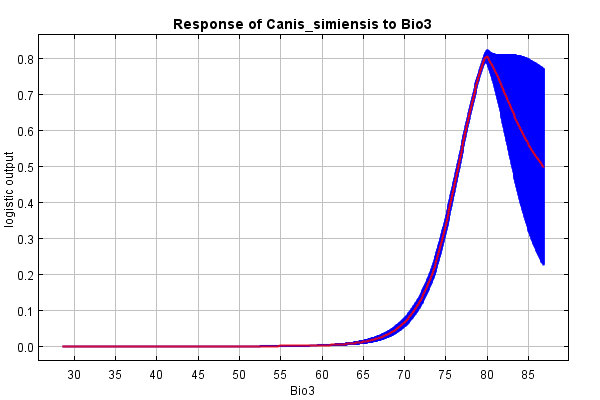
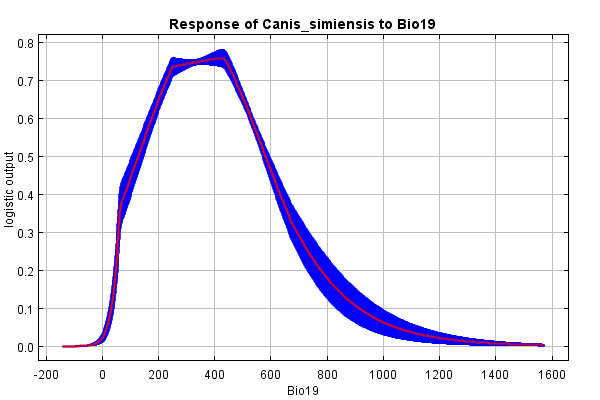
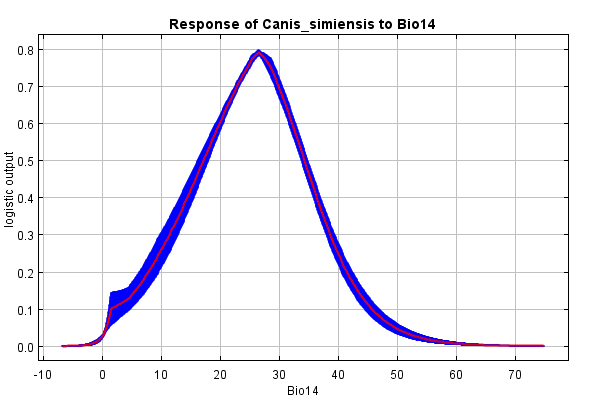


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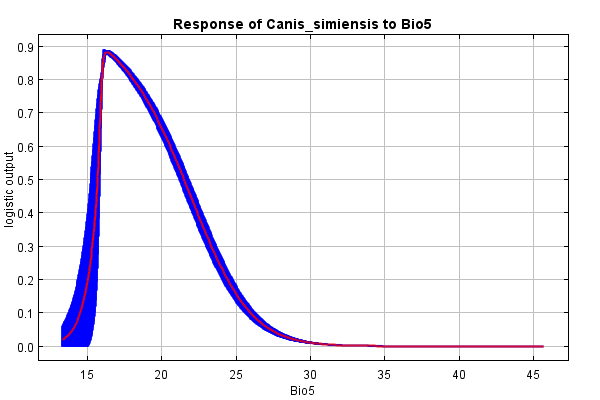
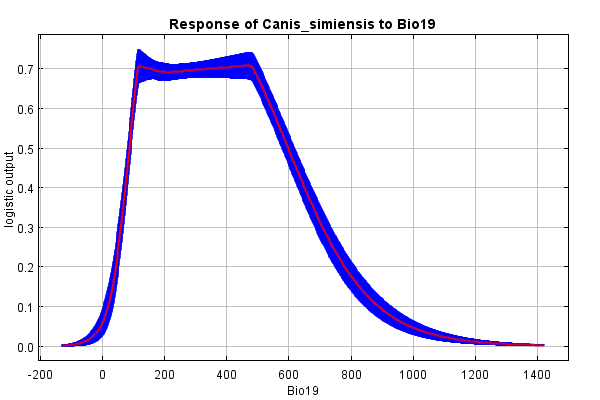
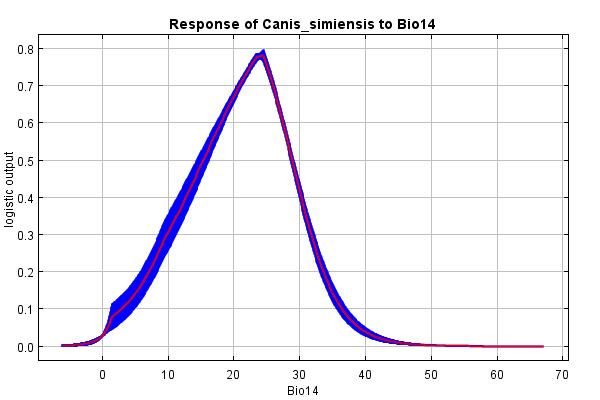
Figure S2. The test omission rate and receiver operating characteristic (ROC) curve predicted area as a function of the cumulative threshold for the future predictor variables used for modelling.



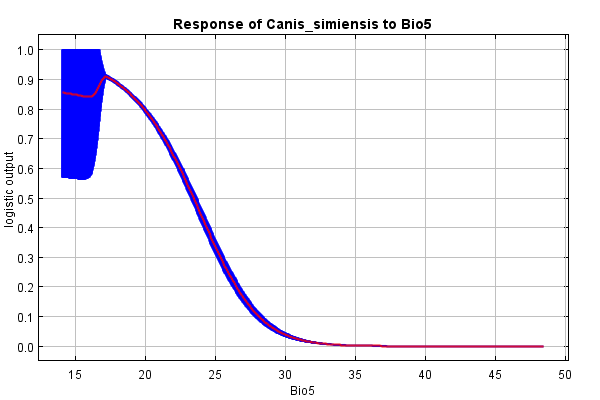
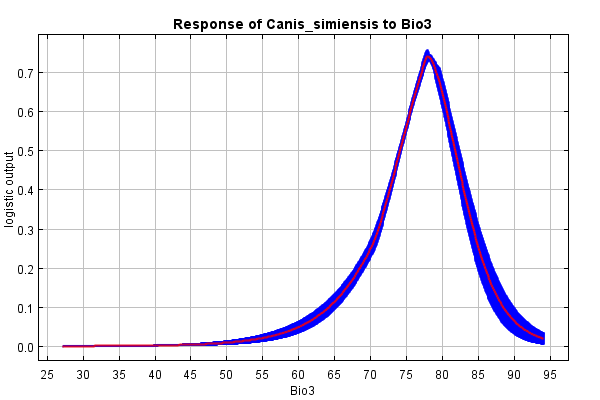
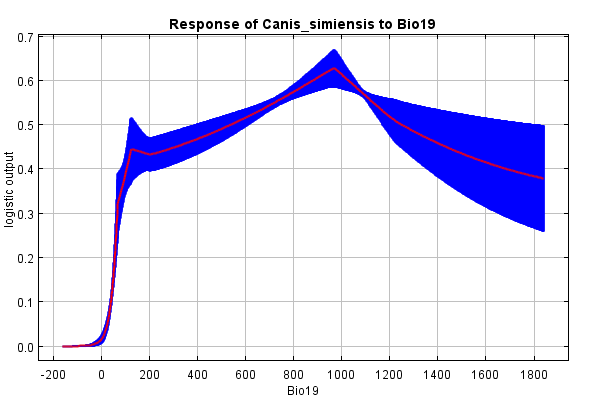
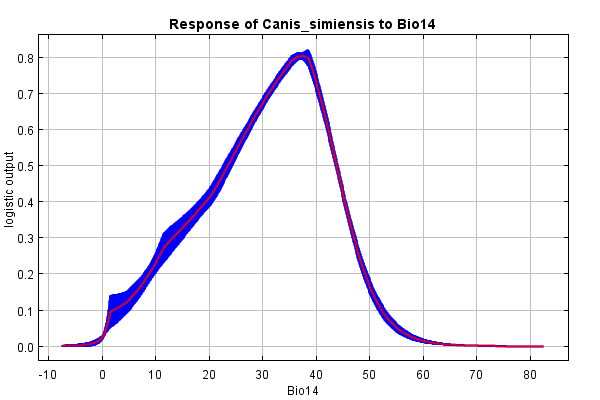
1. BCC-CSM5 2050 2.6



1. BCC-CSM5 2070 8.5

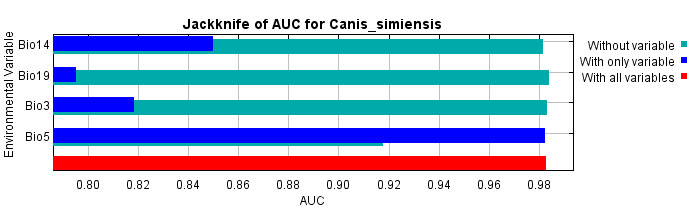
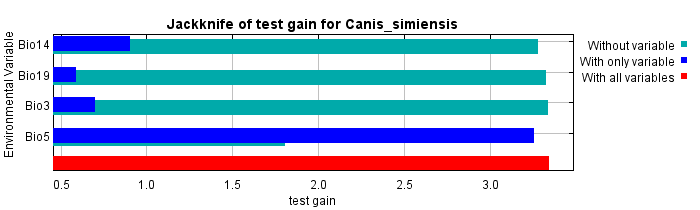
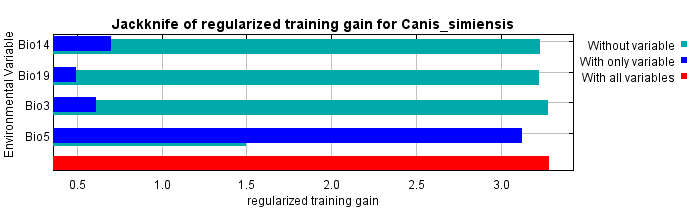


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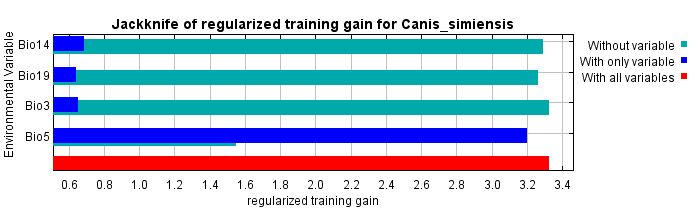
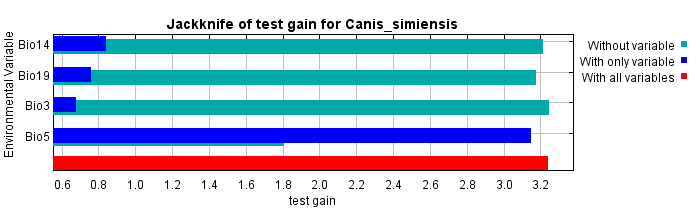
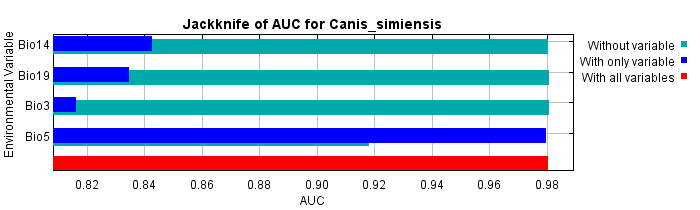


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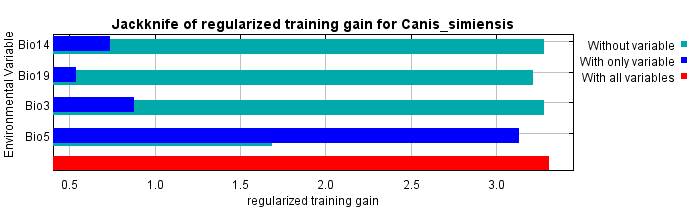
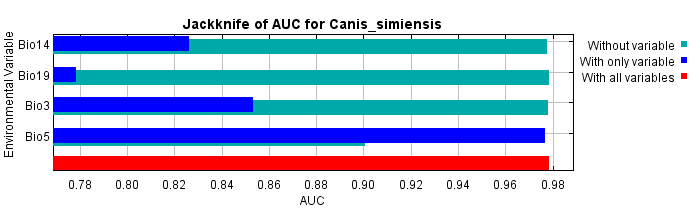
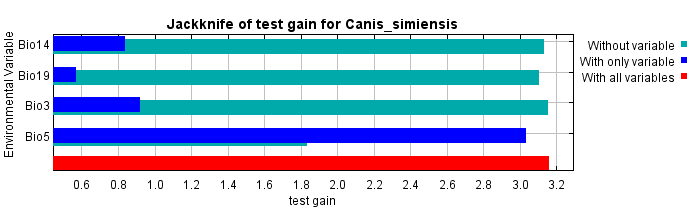
Figure S3. Representative response curves of the most relevant environmental factors affecting the distribution of C. simensis (SSP 2.6 and SSP 8.5) from both global climates modeling systems BCC-CSM5 and CanESM.



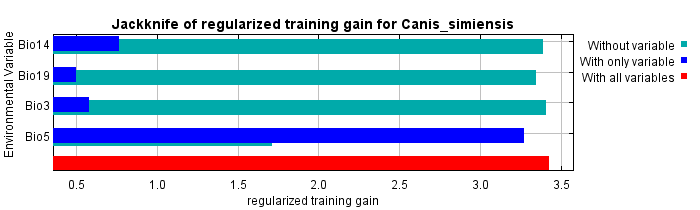
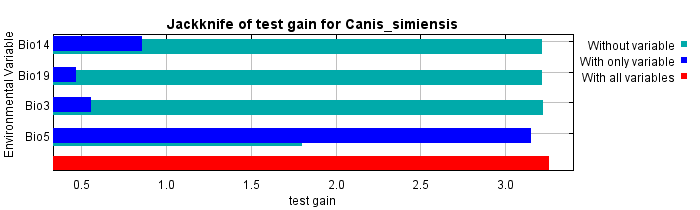
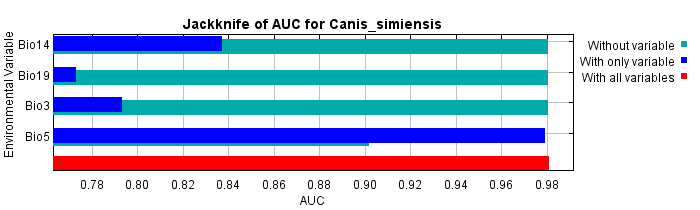
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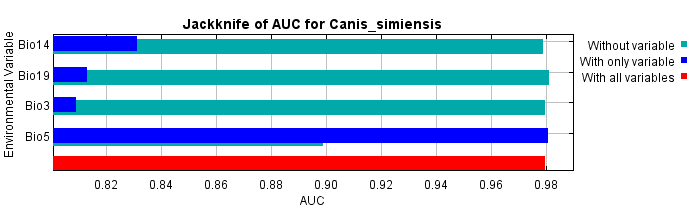
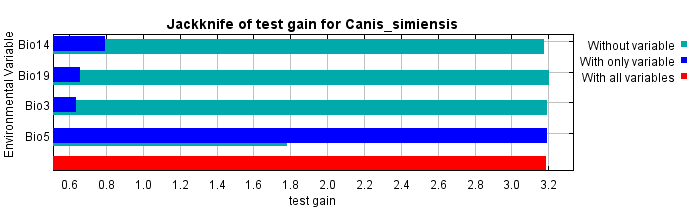
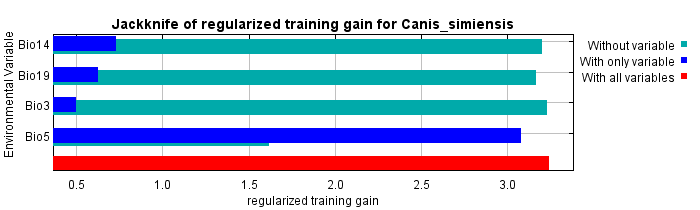
1. BCC-CSM5 2050 4.5

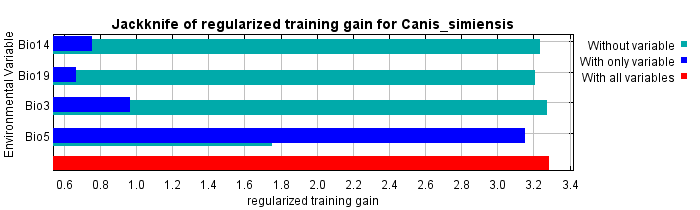
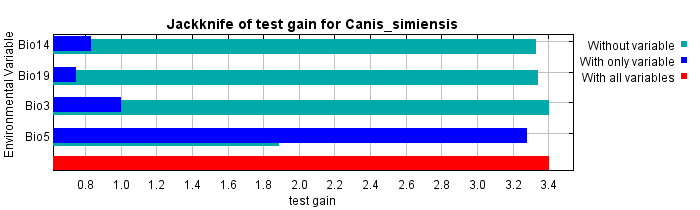
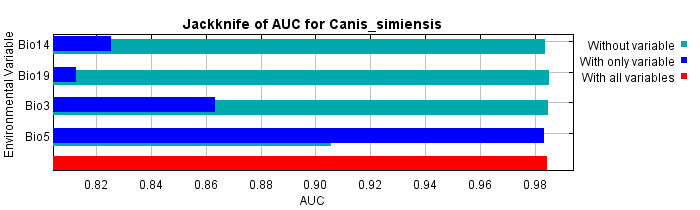
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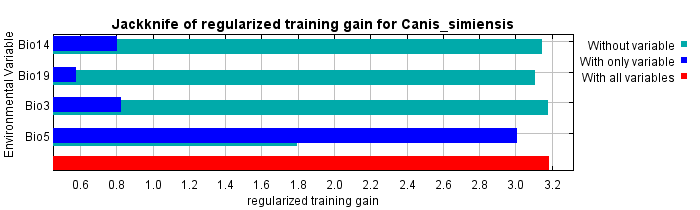
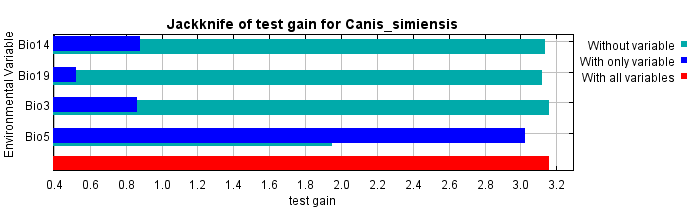
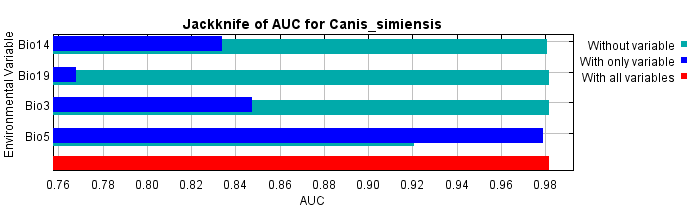
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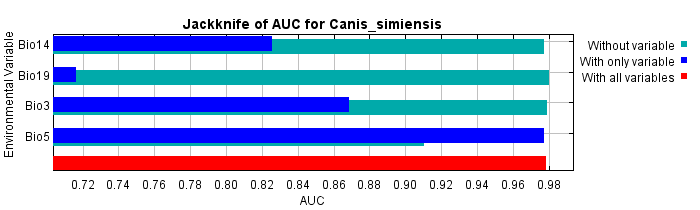
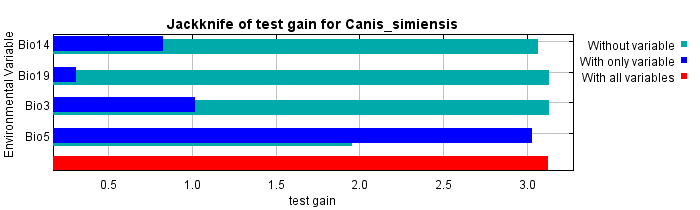
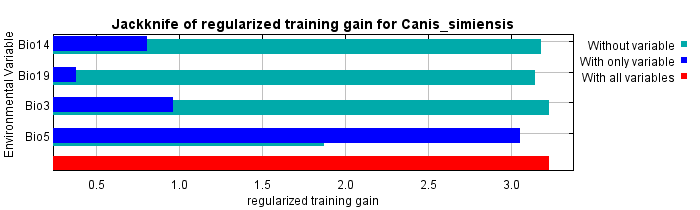
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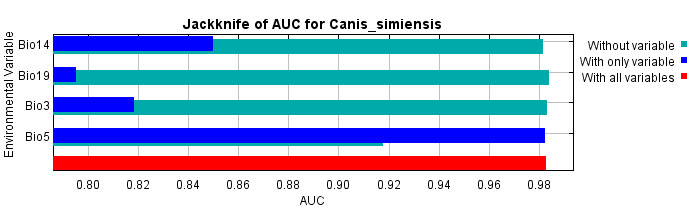
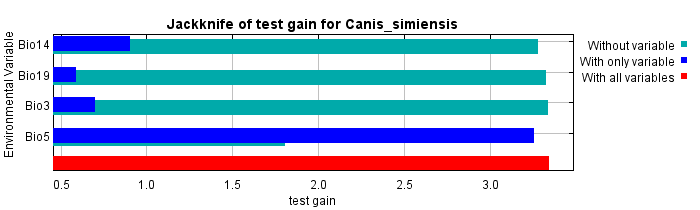
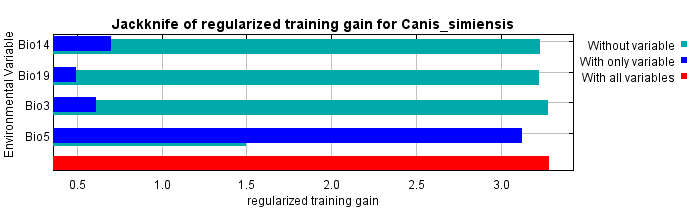
1. BCC-CSM5 2070 8.5

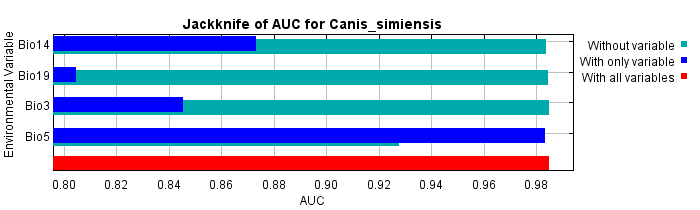
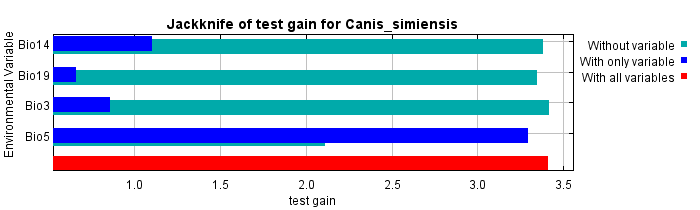
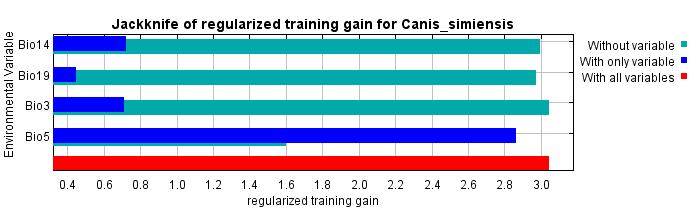
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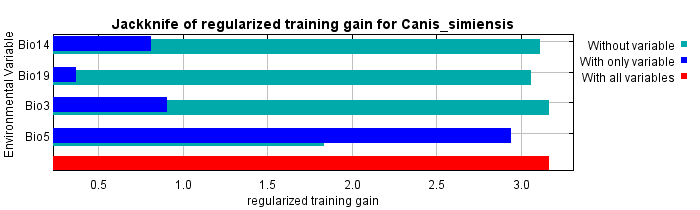
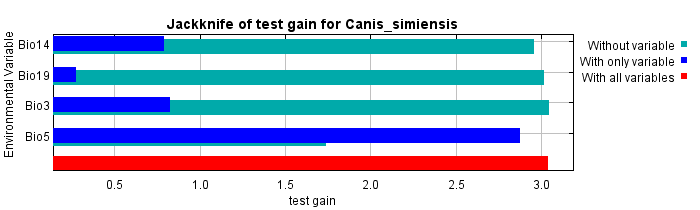
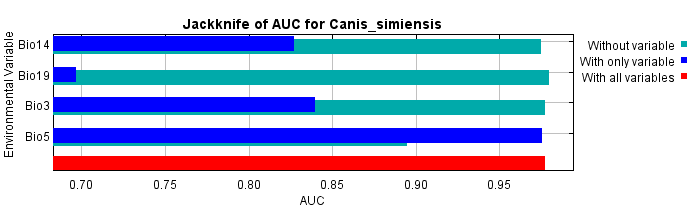
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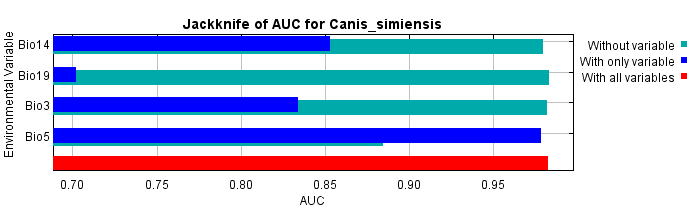
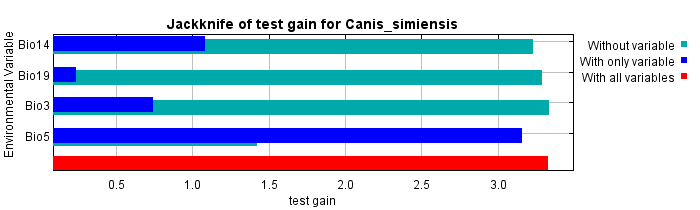
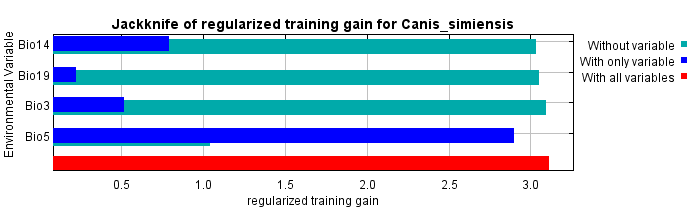
1. CanESM 2050 8.5



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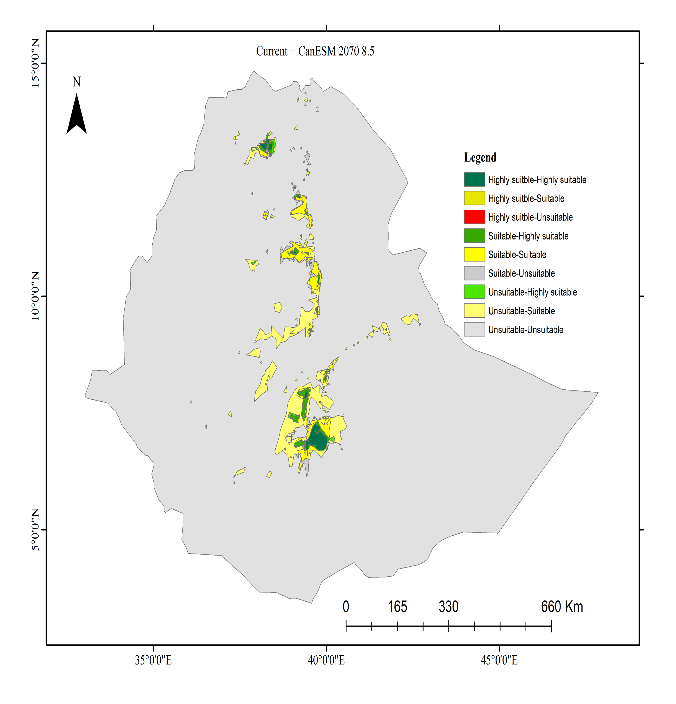
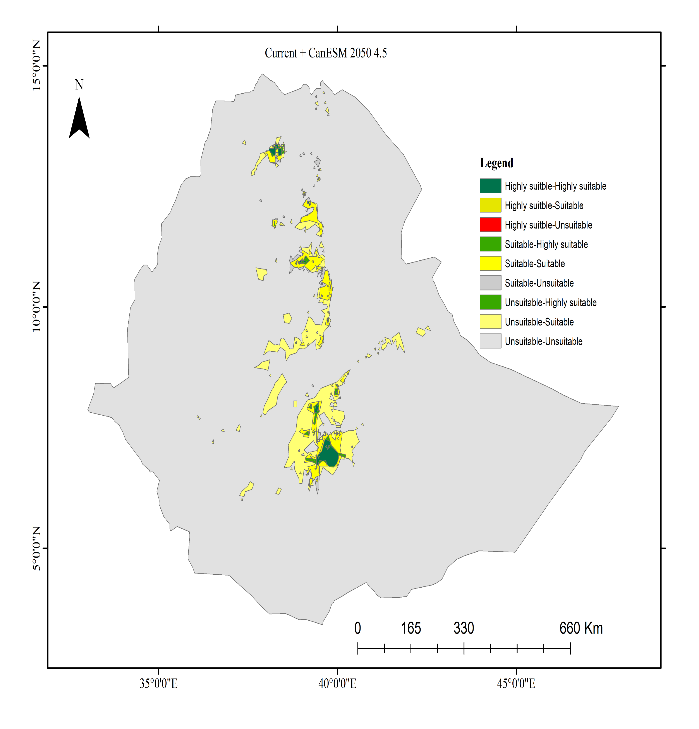
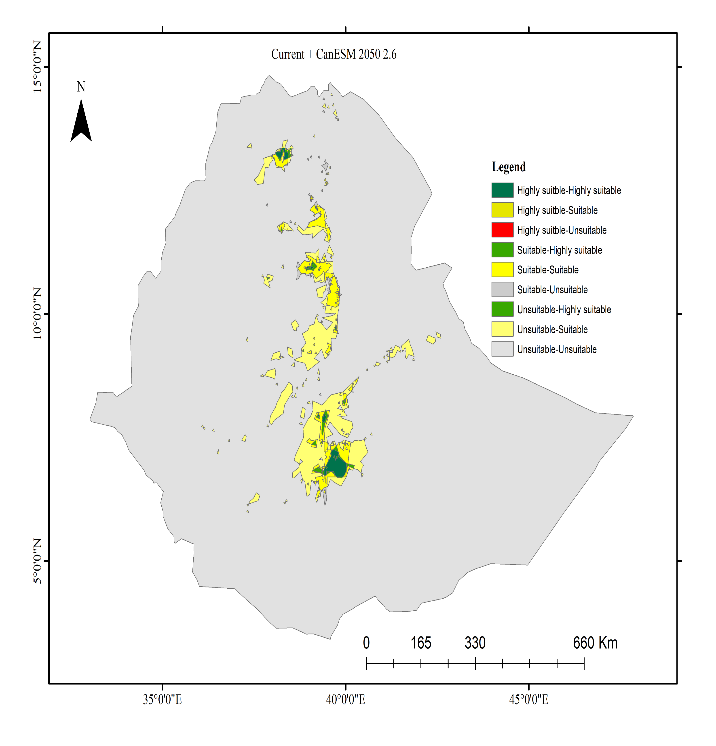
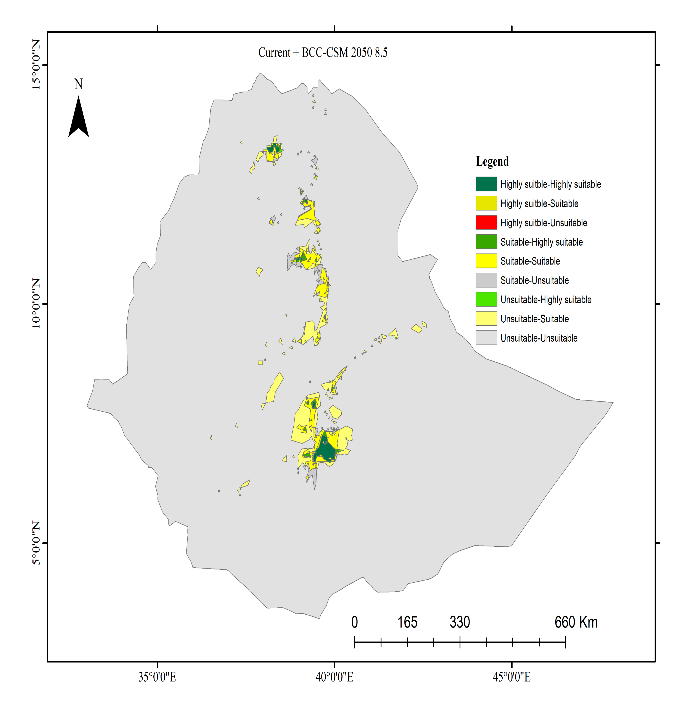
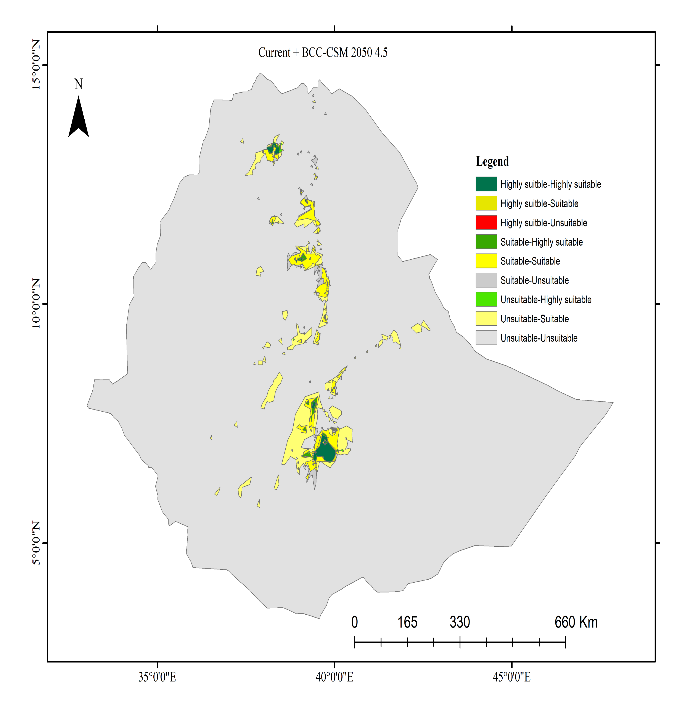
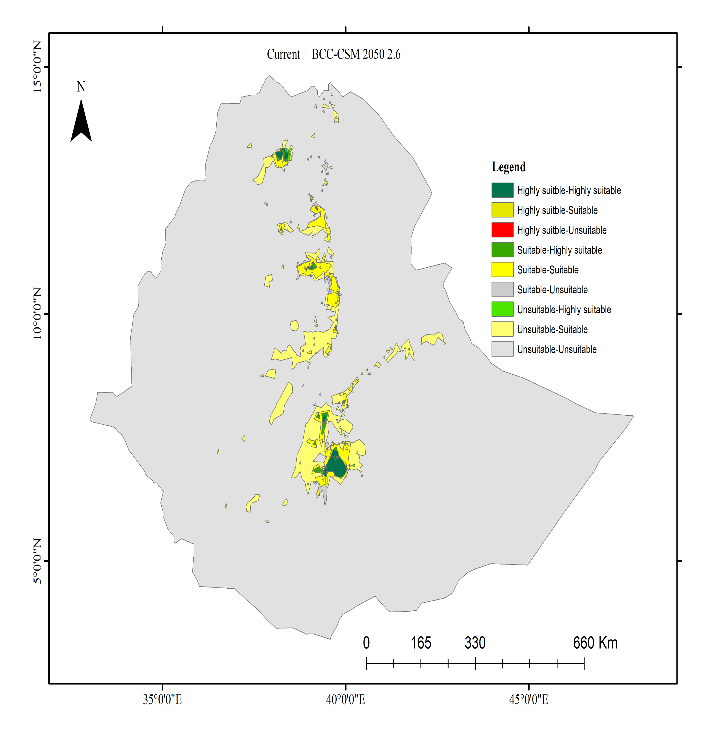
  

1. CanESM 2070 4.5



1. CanESM 2070 8.5

Figure S4. Relative predictive power of different bioclimatic variables based on the jackknife of regularized training gain in the MaxEnt models for *Canis* *simensis*, 2050s and 2070s under different future scenarios for both BCC-CSM5 AND CanESM bioclimate system respectively. The figure shows training gain, test gain and jackknife AUC respectively in each scenario.



a

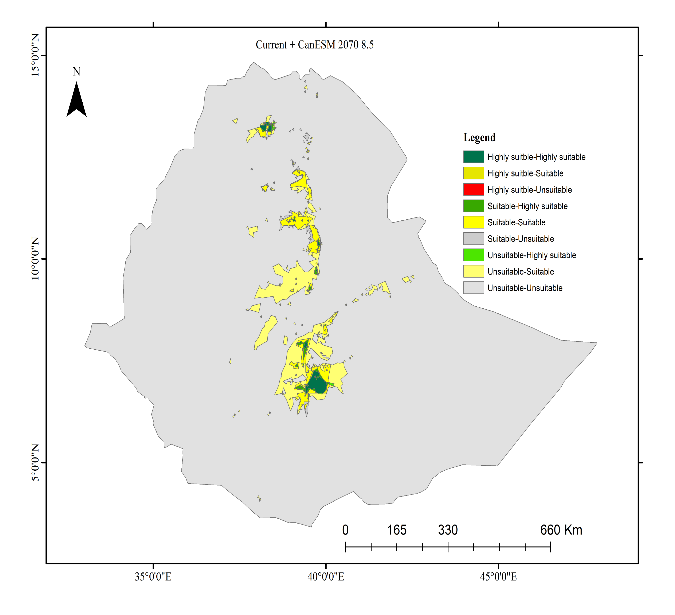
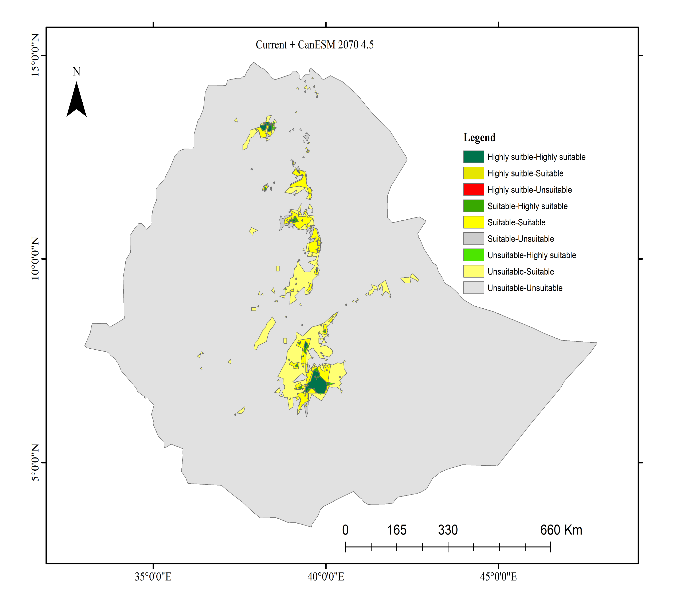
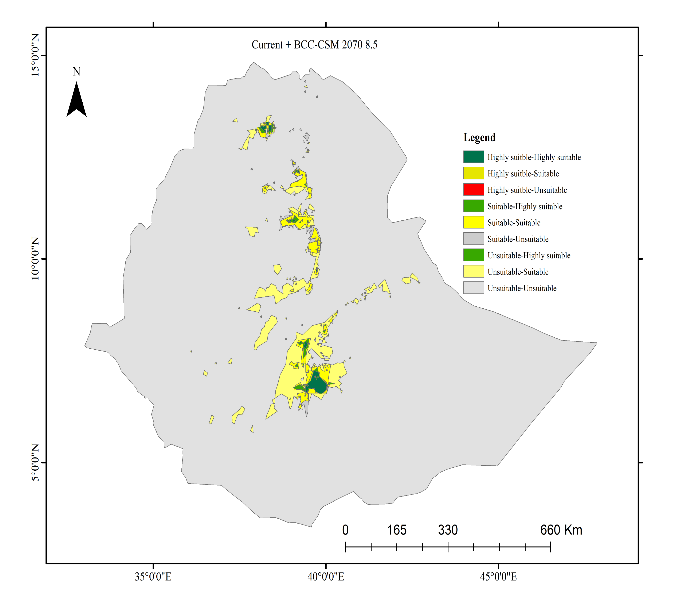
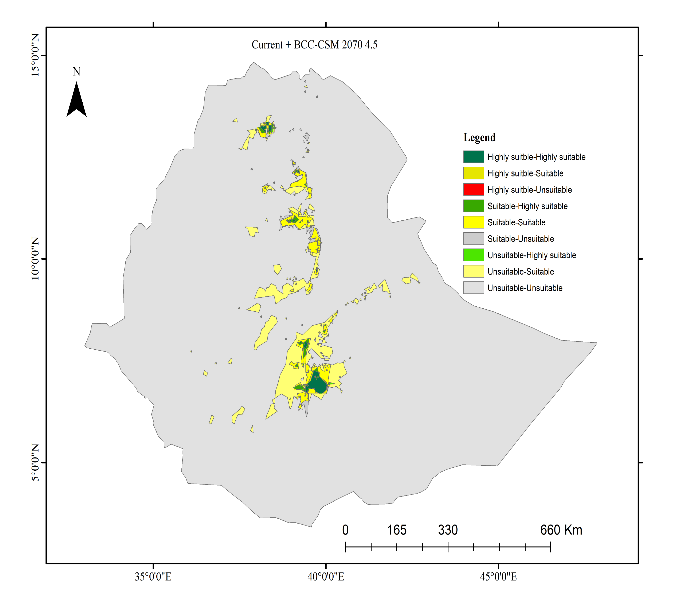
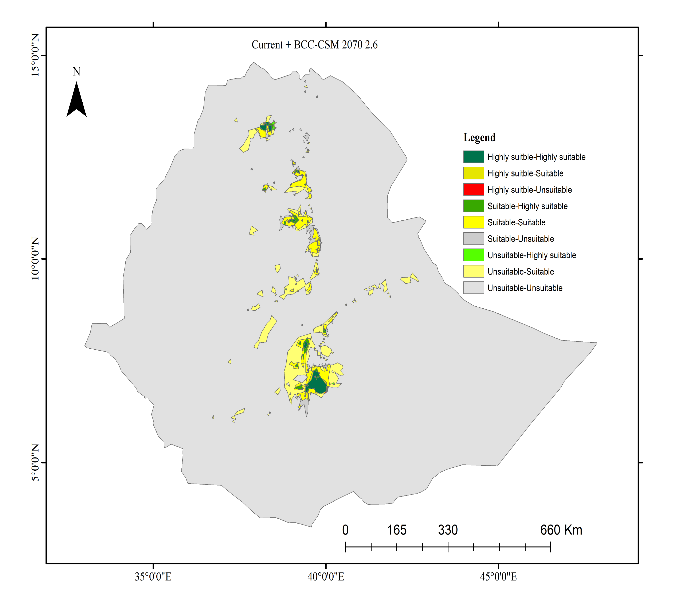
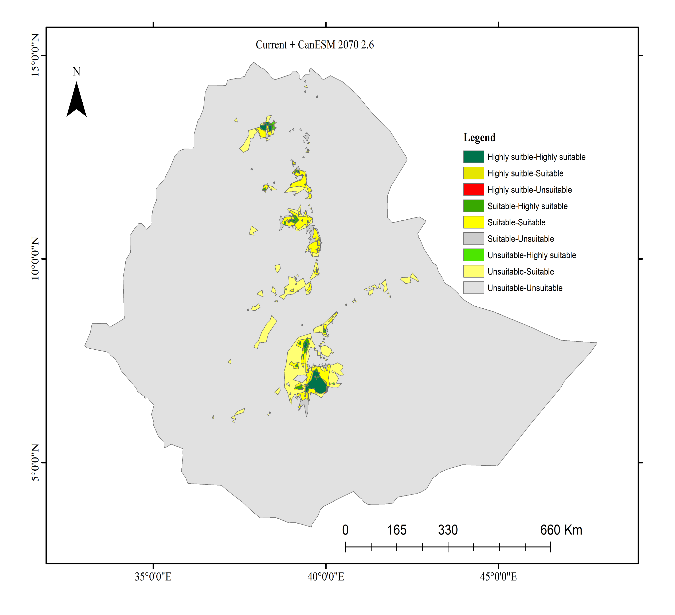
c

e

b

d

f



g

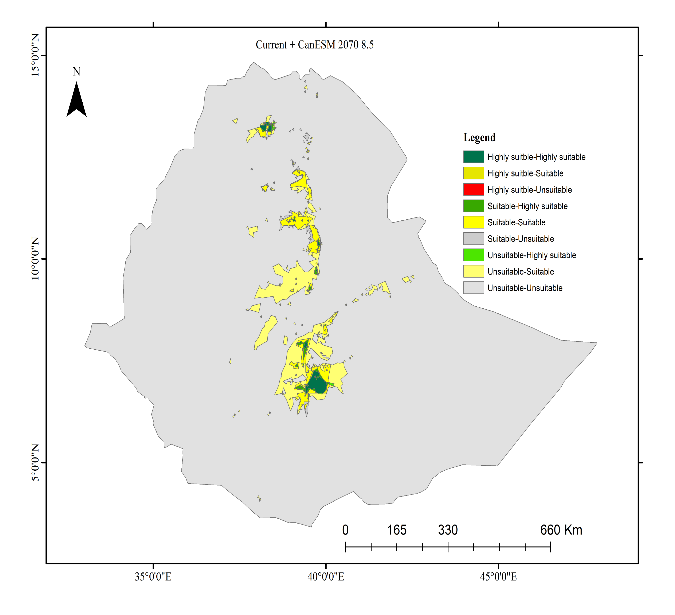
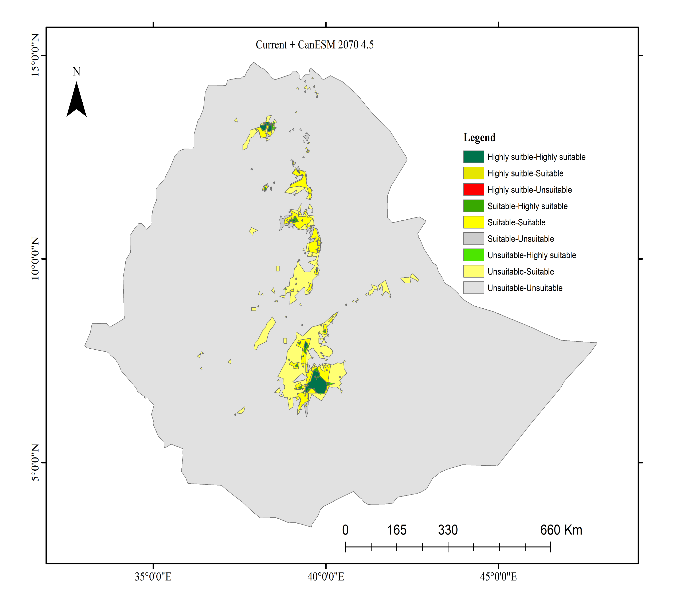
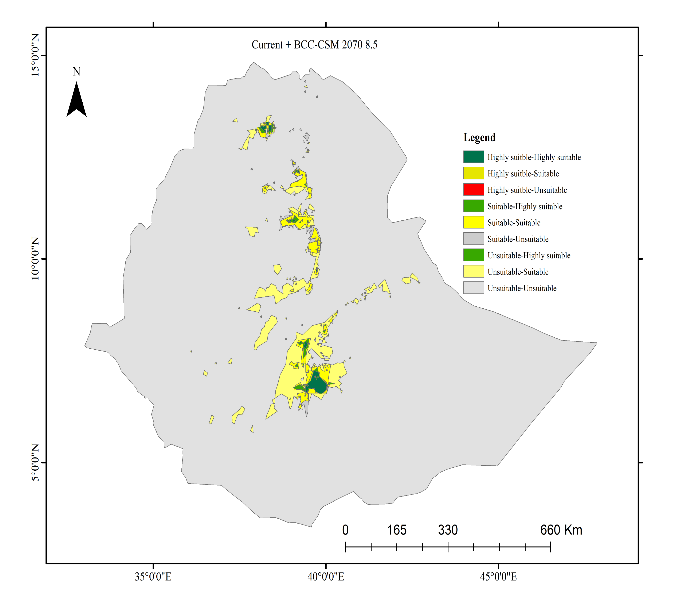
i

i

h

k

l



k

j

l

Figure S5 Predicted habitat suitability area change C. simensis under different climate change scenarios developed by BCC-CSM5 and CanESM.



Figure S6 Ethiopian wolves are expected to thrive in a variety of habitats.

Table S1: Habitat suitability of *C*. *siminsis* in different scenarios

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Scenarios | GCM | Habitat predicted to be suitable | Highly suitable | % | Suitable | % | Unsuitable | % | Total |
| Current |  | 2779658 | 346454.1 | 0.31 | 2433204 | 2.15 | 1.1E+08 | 97.54 | 1.13E+08 |
| 2050 2.6 | BCC-CSM | 5402991 | 491207.5 | 0.43 | 4911784 | 4.34 | 1.08E+08 | 95.22 | 1.13E+08 |
|  | CanESM | 5937167 | 513494.4 | 0.45 | 5423672 | 4.80 | 1.07E+08 | 94.75 | 1.13E+08 |
| 2050 4.5 | BCC-CSM | 4122934 | 447341.7 | 0.40 | 3675592 | 3.25 | 1.09E+08 | 96.35 | 1.13E+08 |
|  | CanESM | 5217248 | 497934.2 | 0.44 | 4719313 | 4.17 | 1.08E+08 | 95.39 | 1.13E+08 |
| 2050 8.5 | BCC-CSM | 3550526 | 435702.4 | 0.39 | 3114824 | 2.75 | 1.1E+08 | 96.86 | 1.13E+08 |
|  | CanESM | 4747086 | 773450.4 | 0.68 | 3973636 | 3.51 | 1.08E+08 | 95.80 | 1.13E+08 |
| 2070 2.6 | BCC-CSM | 4053780 | 485162.2 | 0.43 | 3568618 | 3.16 | 1.09E+08 | 96.42 | 1.13E+08 |
|  | CanESM | 5695400 | 515044.8 | 0.46 | 5180355 | 4.58 | 1.07E+08 | 94.96 | 1.13E+08 |
| 2070 4.5 | BCC-CSM | 3752658 | 480697.5 | 0.42 | 3271961 | 2.89 | 1.09E+08 | 96.68 | 1.13E+08 |
|  | CanESM | 4896918 | 451891.9 | 0.40 | 4445026 | 3.93 | 1.08E+08 | 95.67 | 1.13E+08 |
| 2070 8.5 | BCC-CSM | 5401549 | 510788.7 | 0.45 | 4890760 | 4.32 | 1.08E+08 | 95.22 | 1.13E+08 |
|  | CanESM | 5534774 | 513457.5 | 0.45 | 5021317 | 4.44 | 1.08E+08 | 95.11 | 1.13E+08 |