

# MAP PACKET

An appendix to the following report:

Future Climate, Hydrology, Vegetation, and Wildfire Projections for the Southern Sierra Nevada, California: A climate change synthesis in support of Integrated Regional Water Management Planning. 2014. Geos Institute.

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Figure 1. Land ownership in the Southern Sierra Regional Water Management Area.

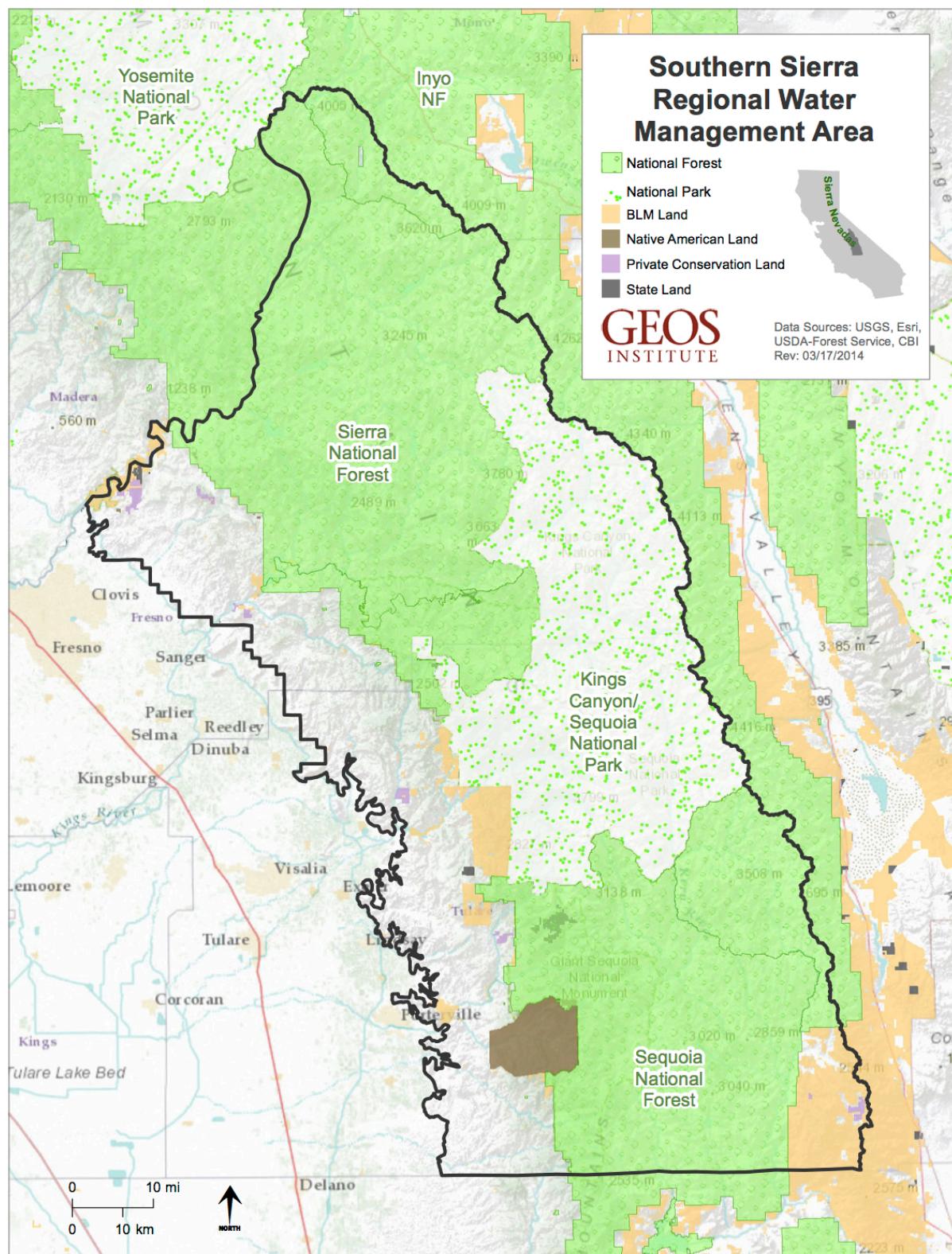


Figure 2. Average annual temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

## Annual Average Temperature



Southern Sierra  
IRWMP

**GEOS**  
INSTITUTE

Data Sources:  
Historic PRISM daa (Gibson et al. 2002)  
GFDL (Stouffer et al. 2006, Delworth et al. 2006)  
PCM (Washington et al. 2000)  
Downscaled following Flint and Flint (2012)

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### Temperature in degrees Celsius

-4 - -1.9	12.6 - 14.6
-1.8 - 0.1	14.7 - 16.6
0.2 - 2.2	16.7 - 18.7
2.3 - 4.3	18.8 - 20.8
4.4 - 6.3	20.9 - 22.8
6.4 - 8.4	22.9 - 24.9
8.5 - 10.4	25 - 26.9
10.5 - 12.5	27 - 29

0 50 mi  
0 50 km

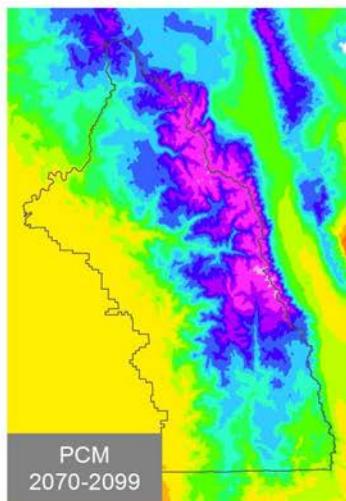
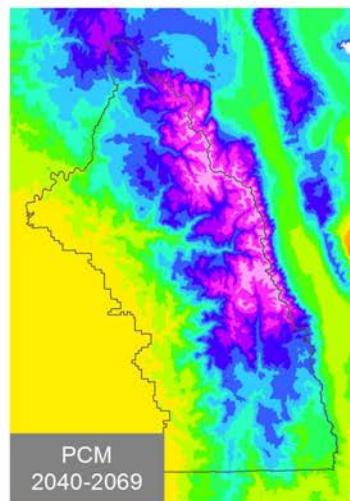
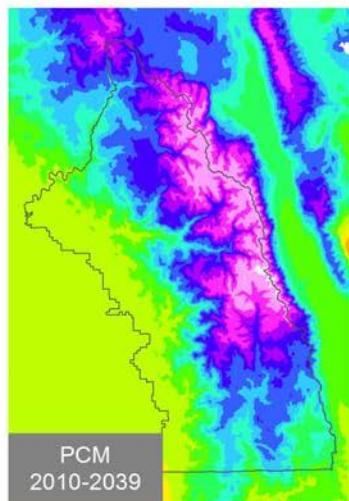
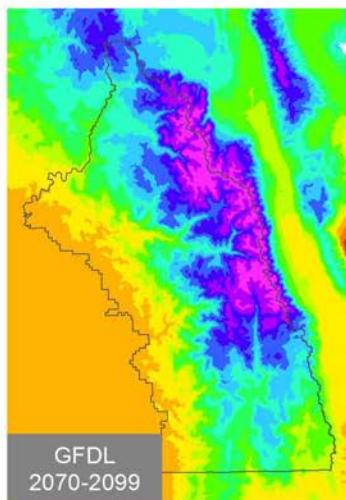
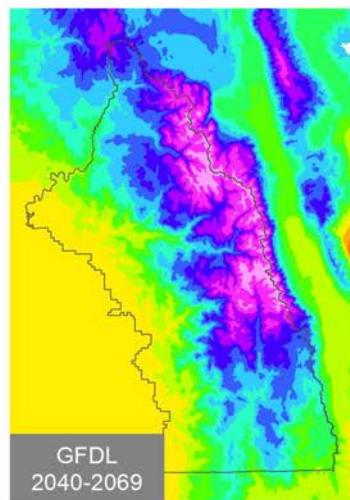
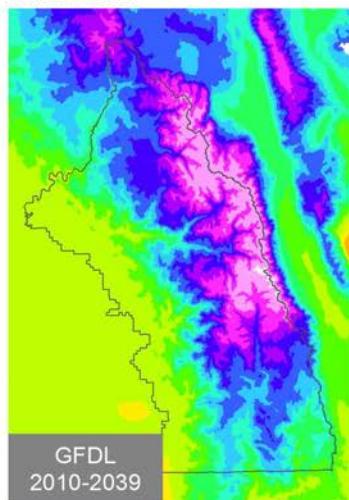
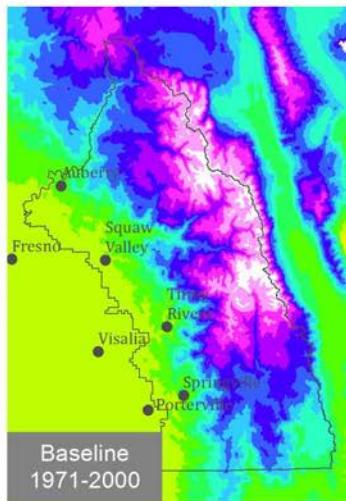


Figure 3. Average January temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

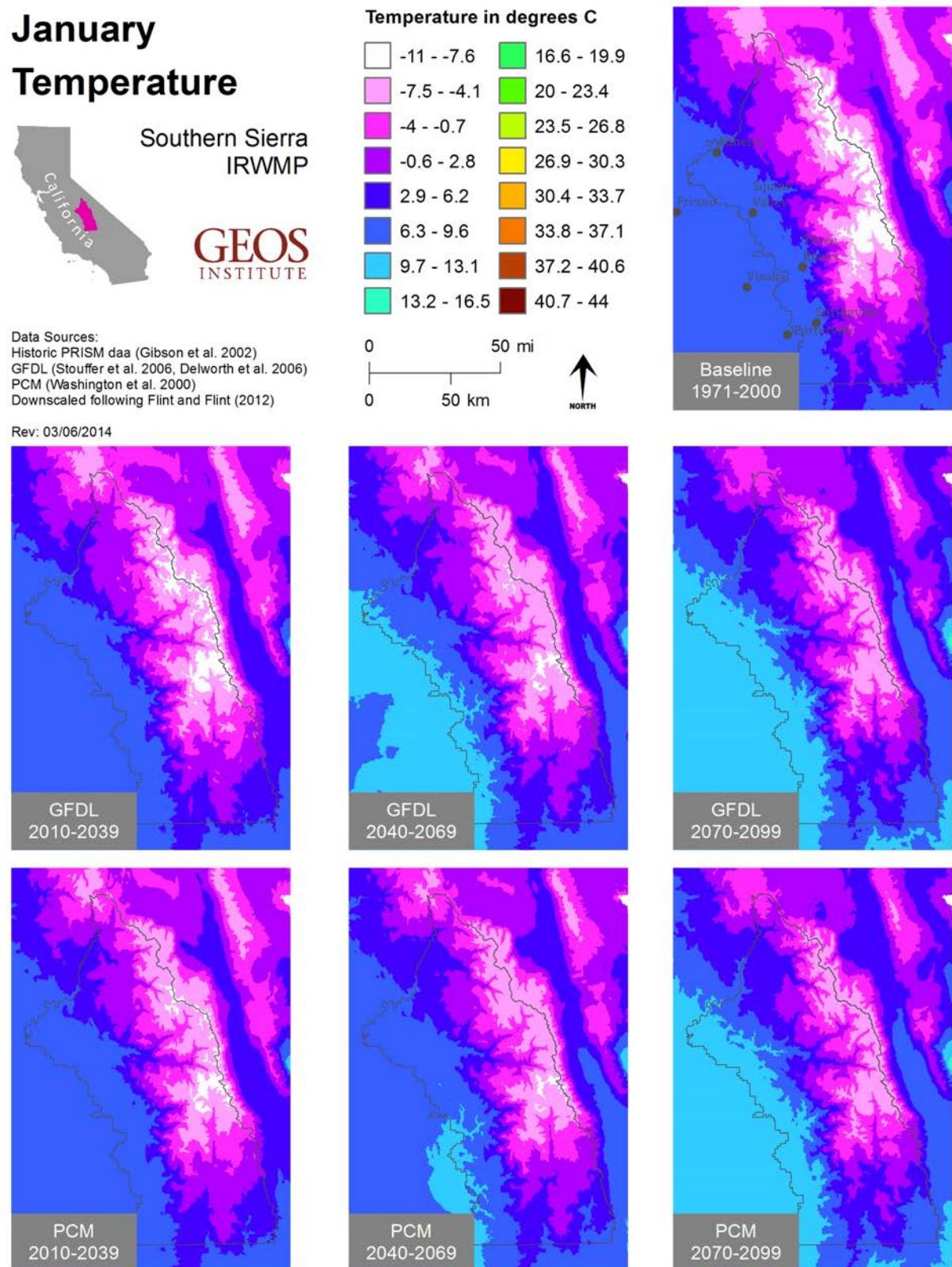


Figure 4. Average February temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

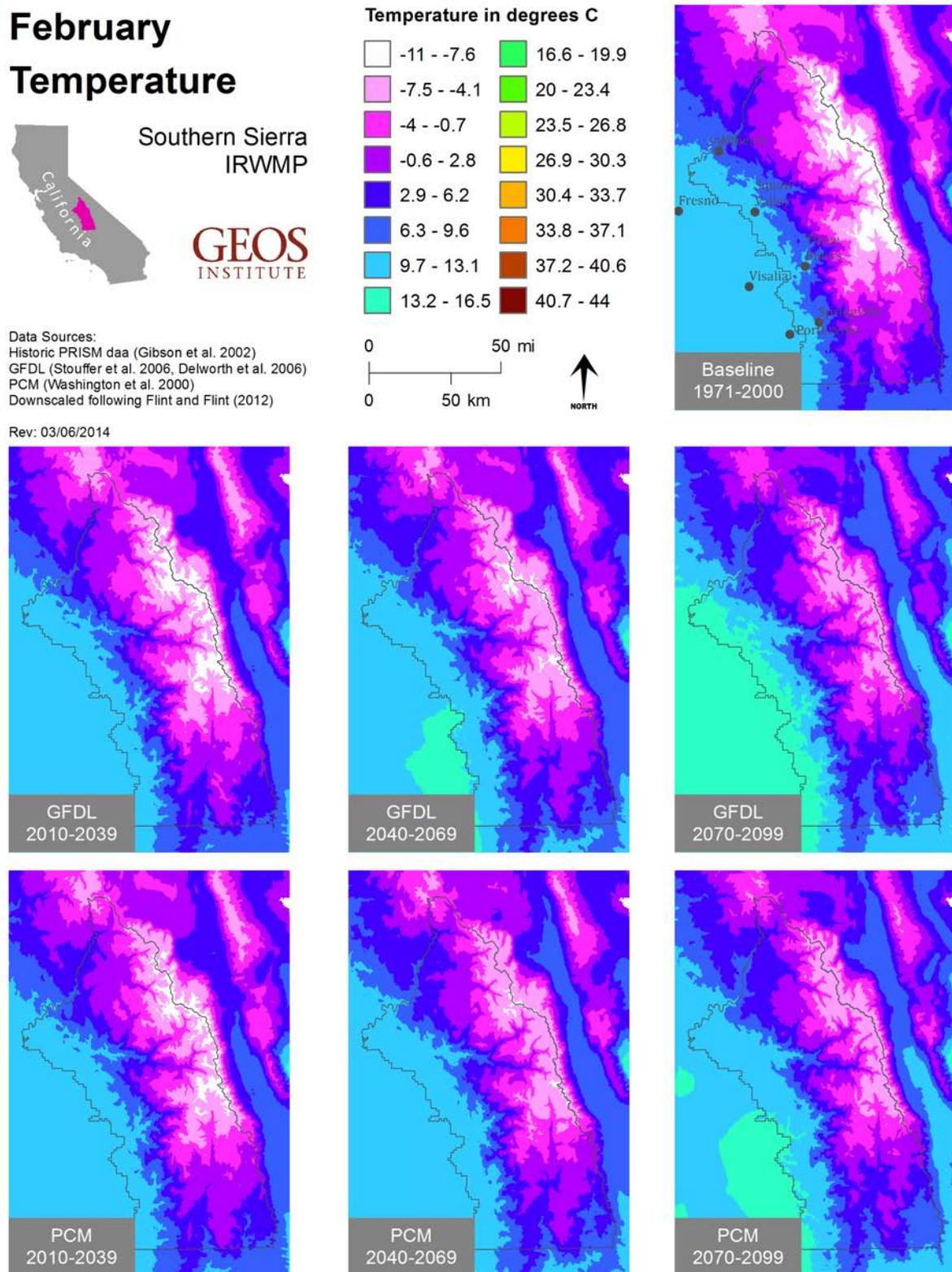


Figure 5. Average March temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

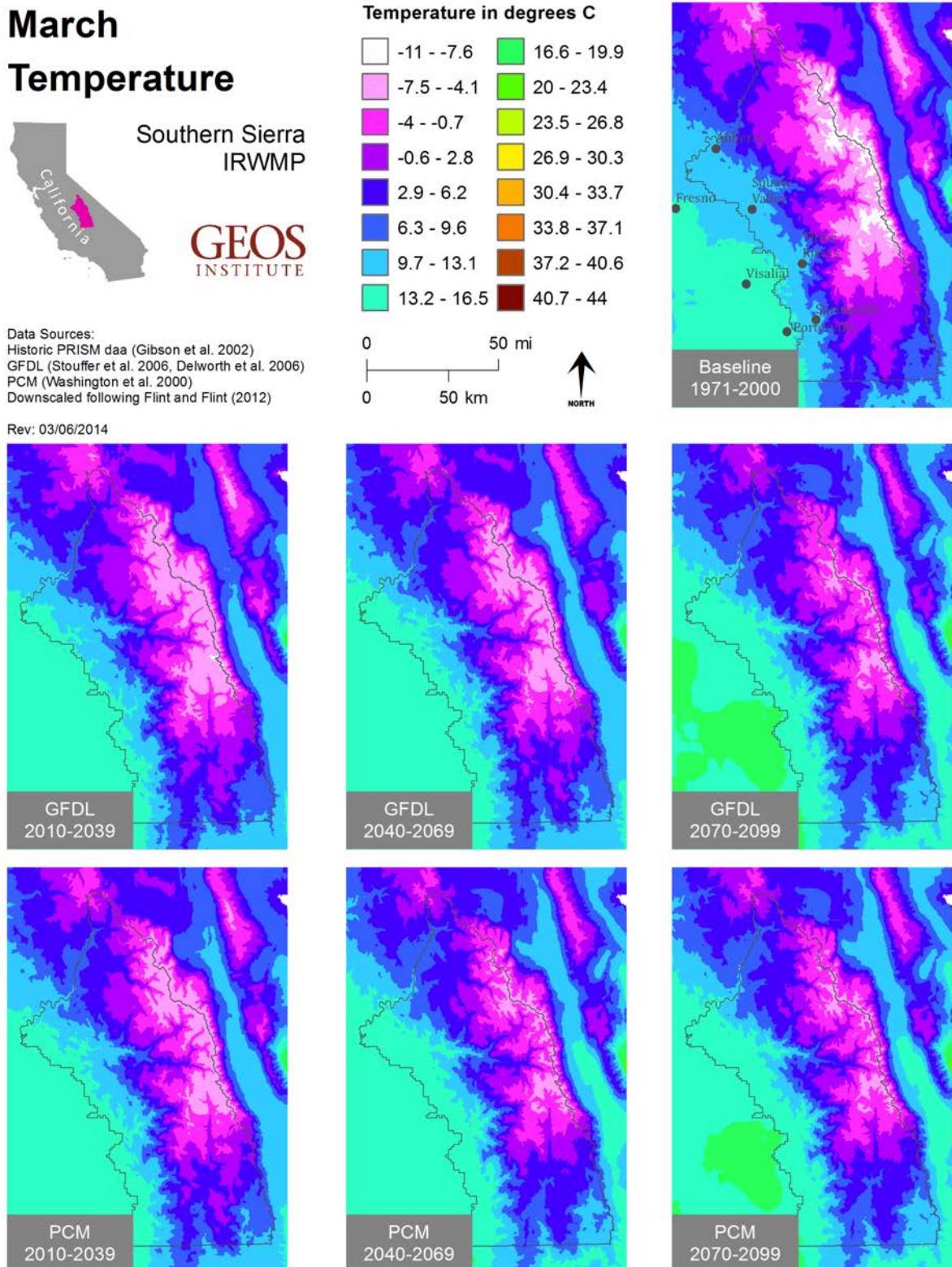


Figure 6. Average April temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

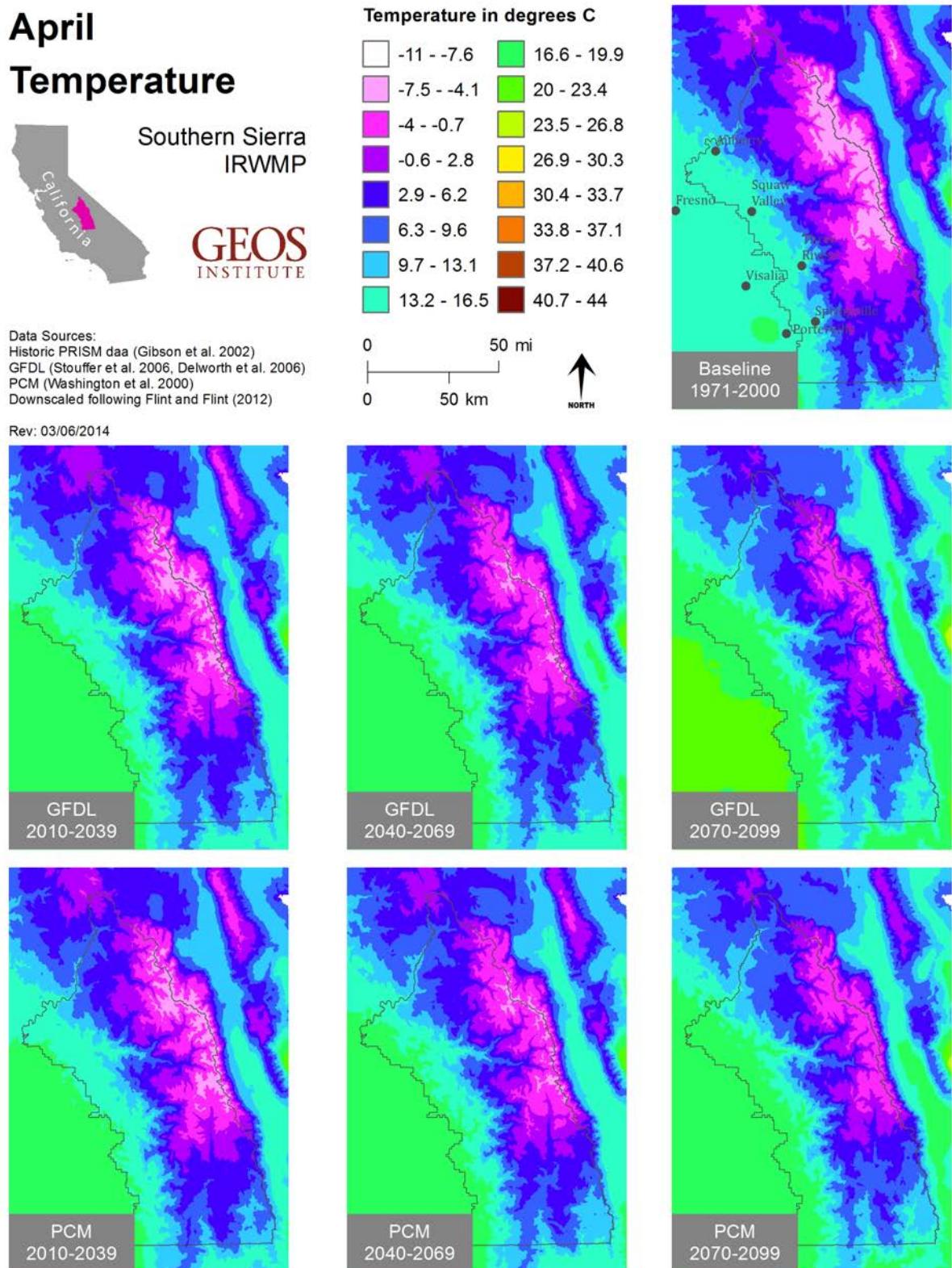


Figure 7. Average May temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

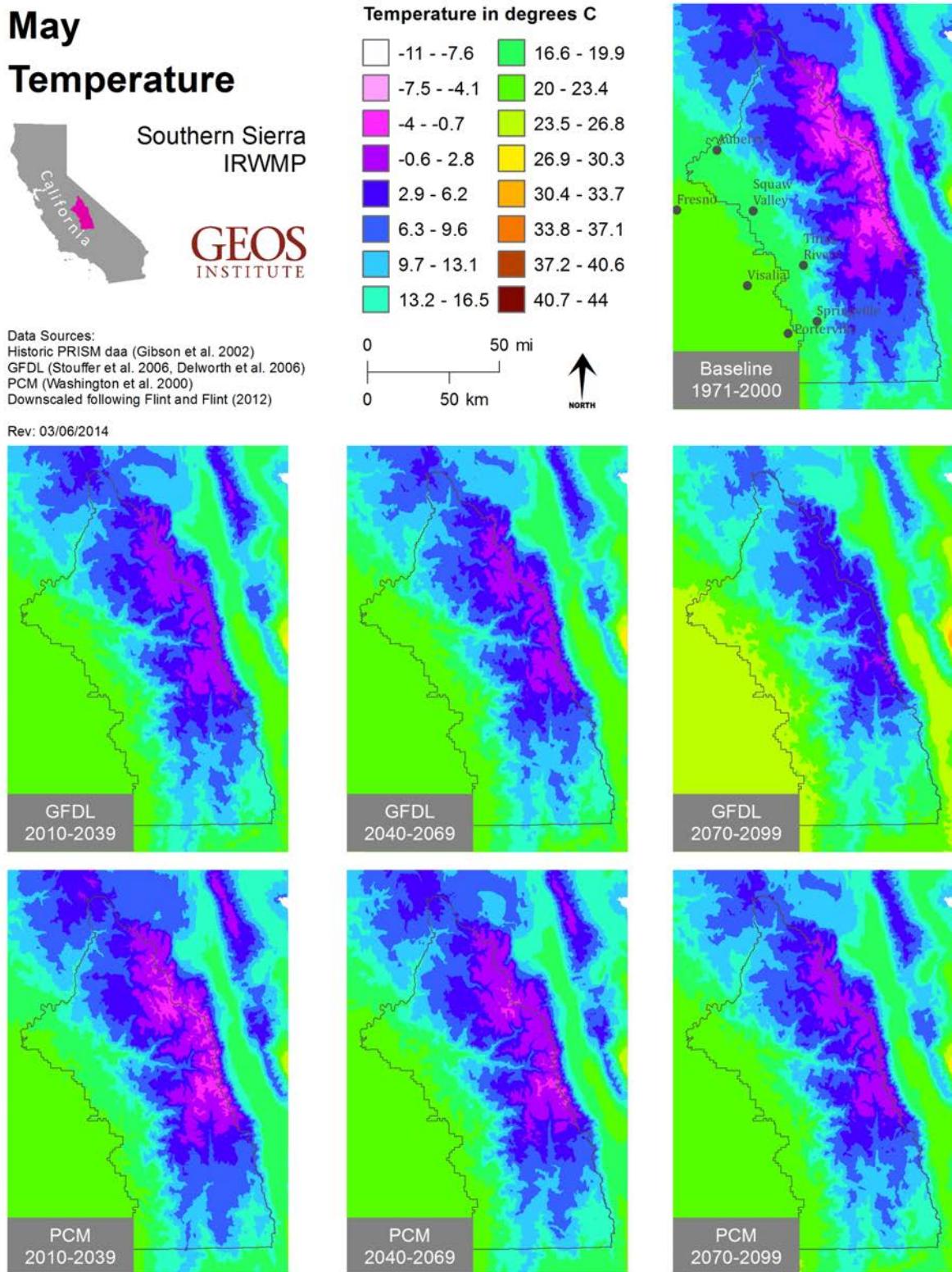


Figure 8. Average June temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

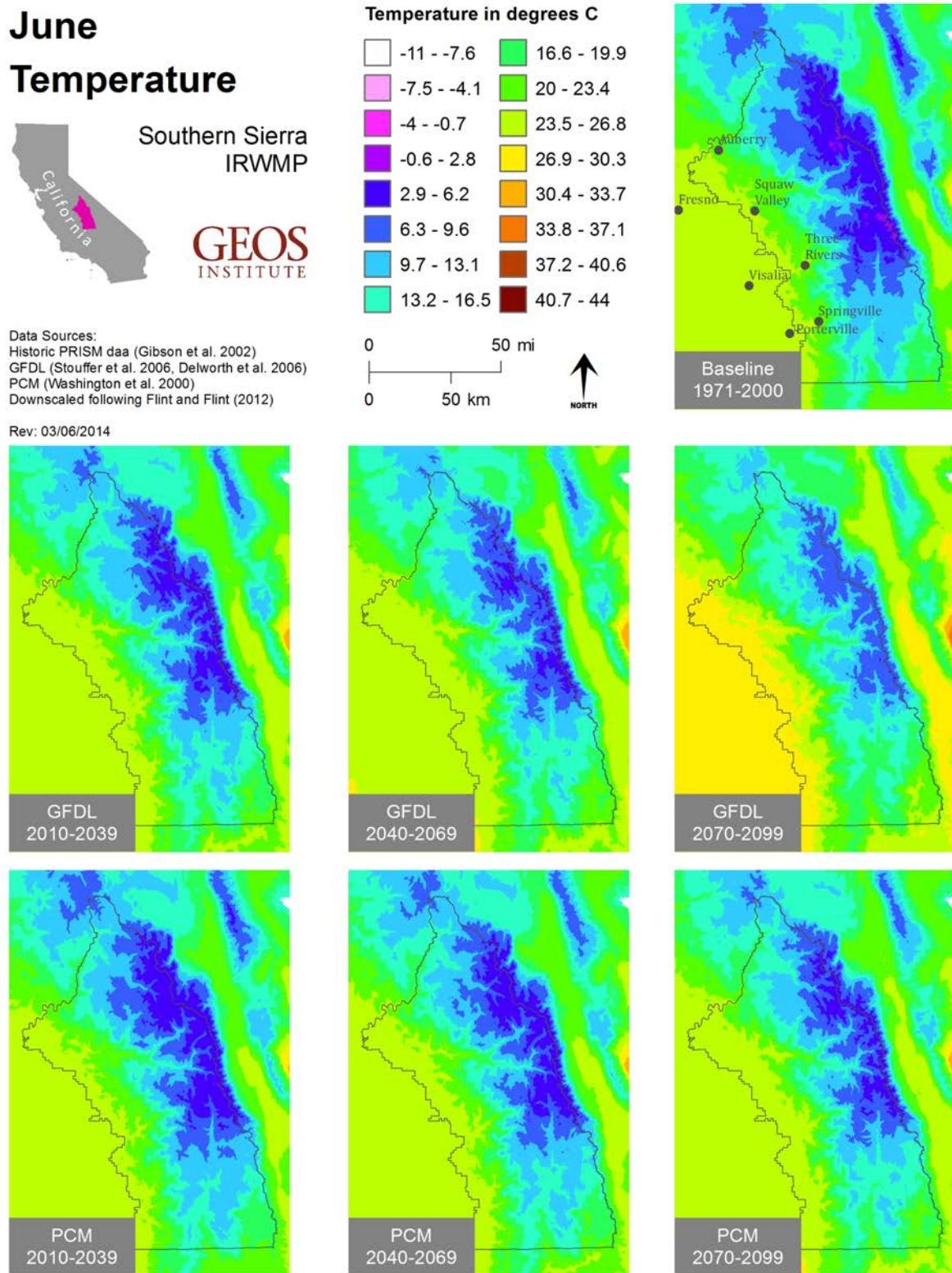


Figure 9. Average July temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

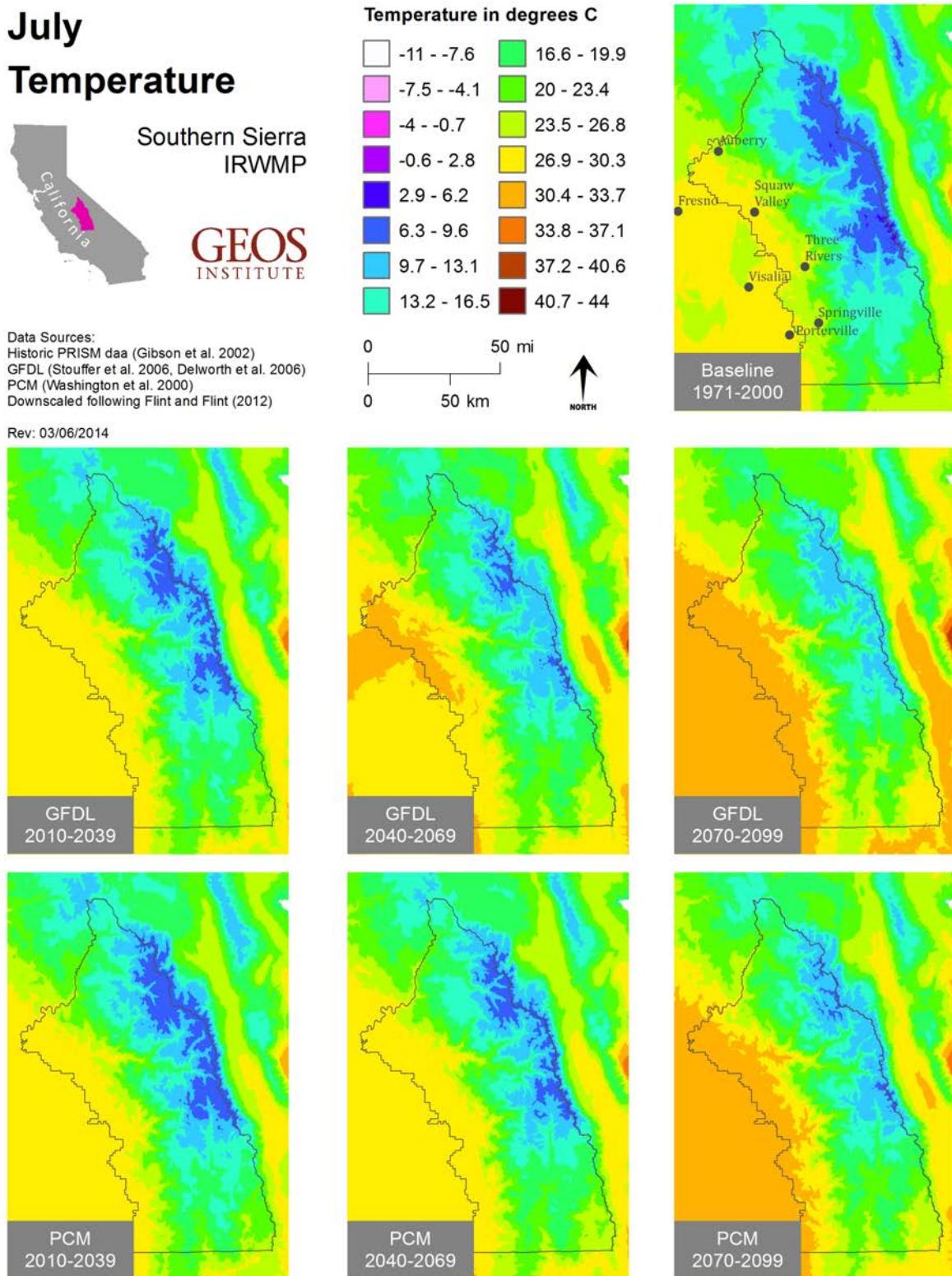


Figure 10. Average August temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

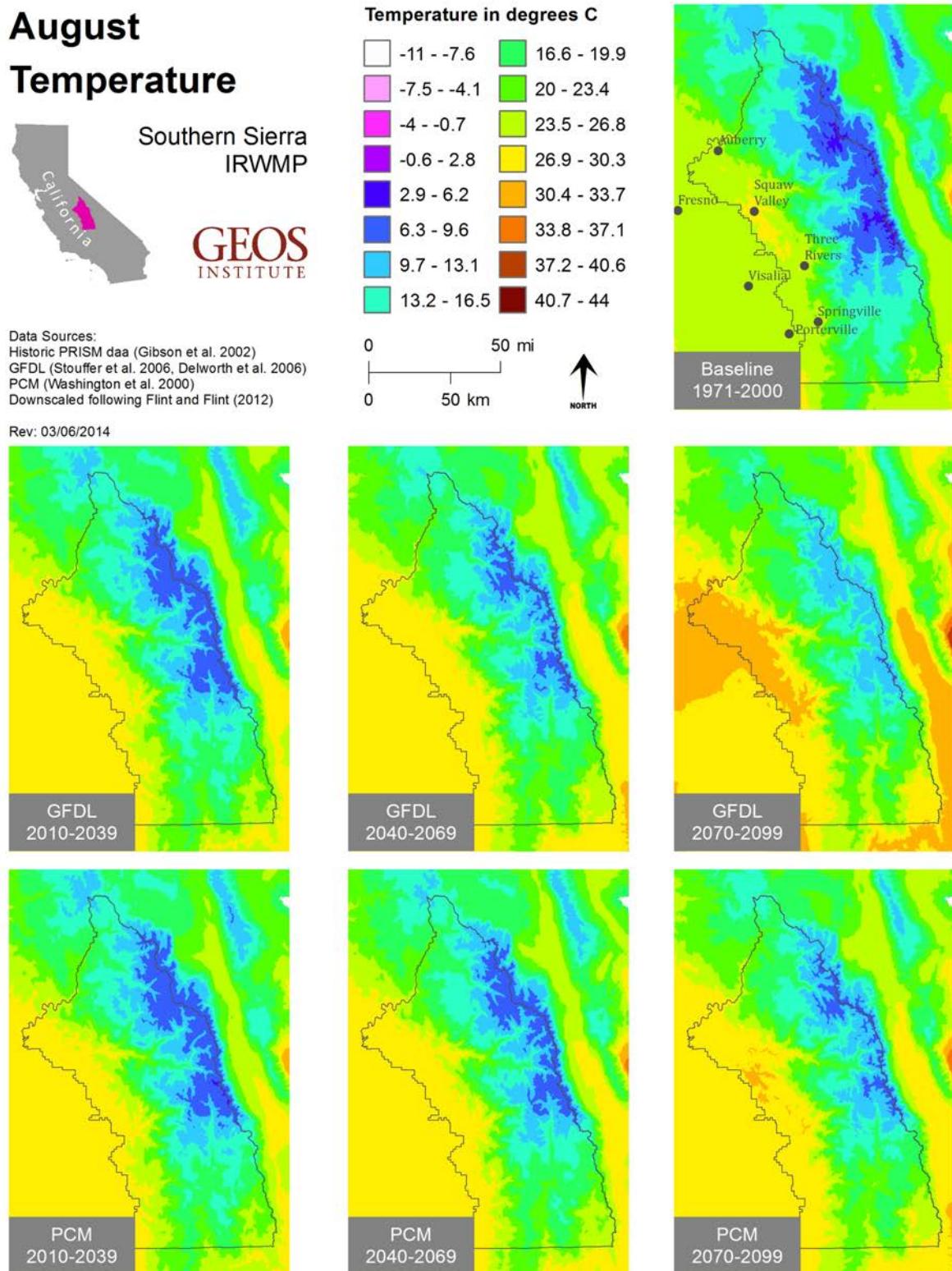


Figure 11. Average September temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

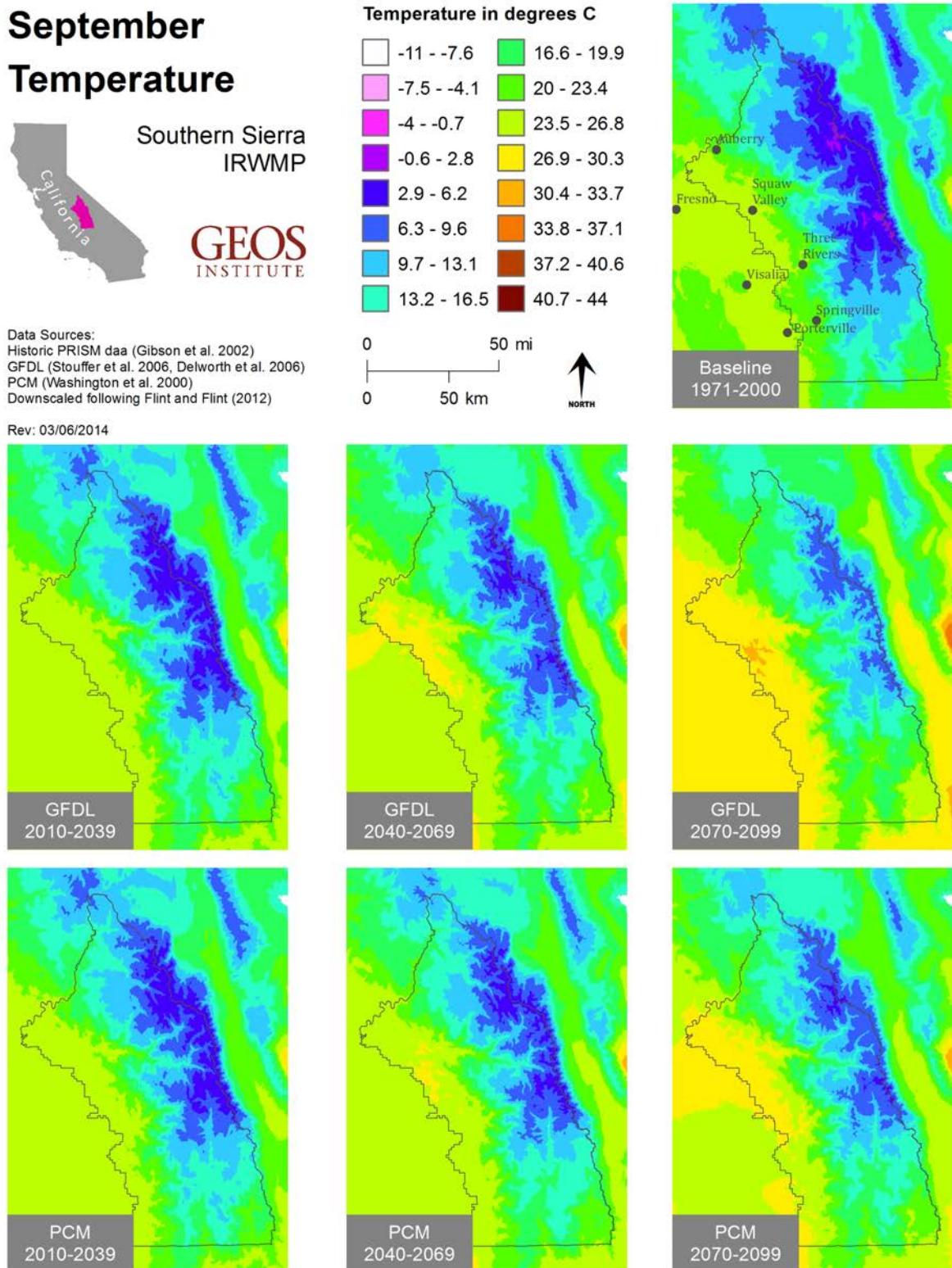


Figure 12. Average October temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

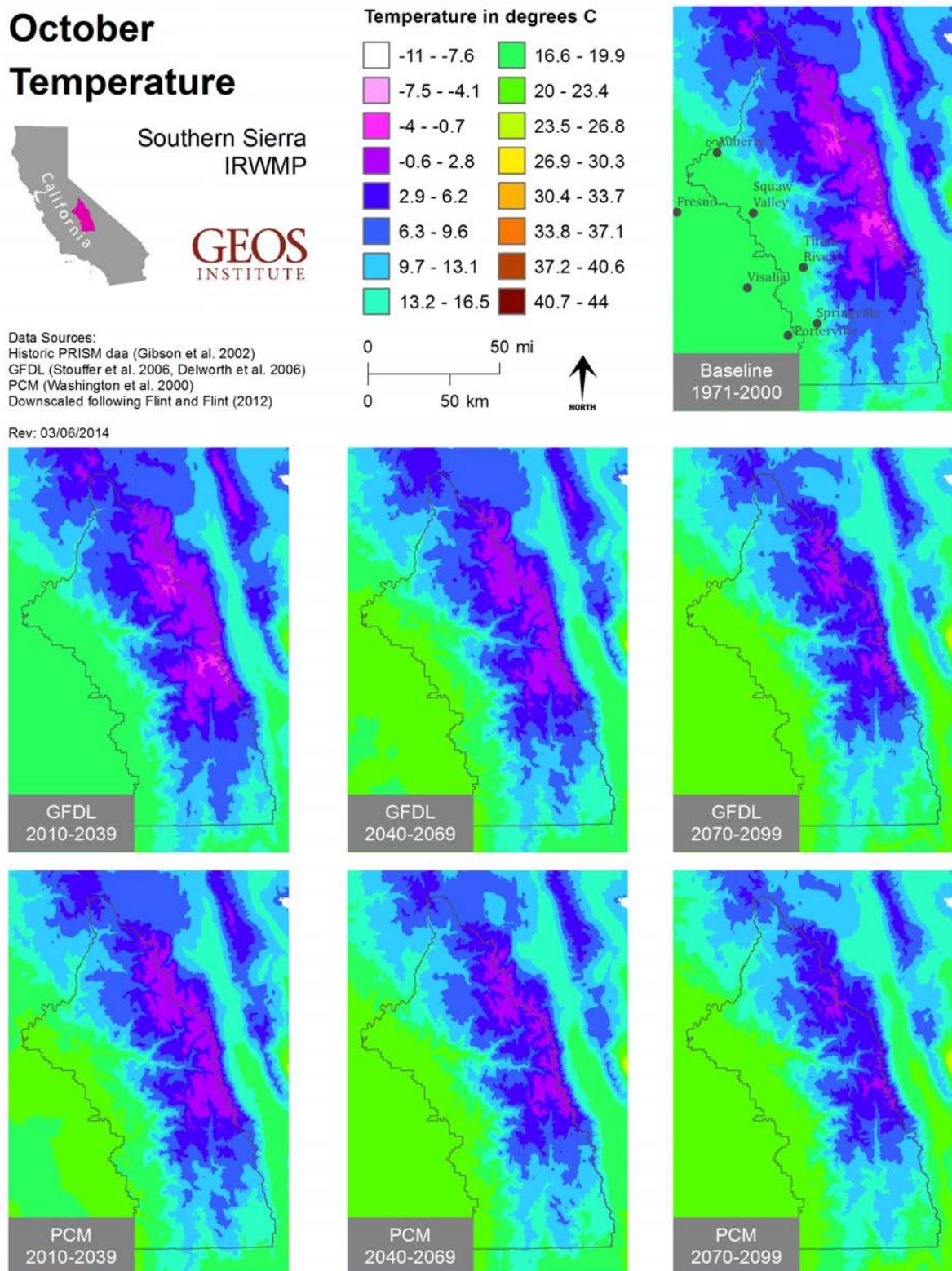


Figure 13. Average November temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

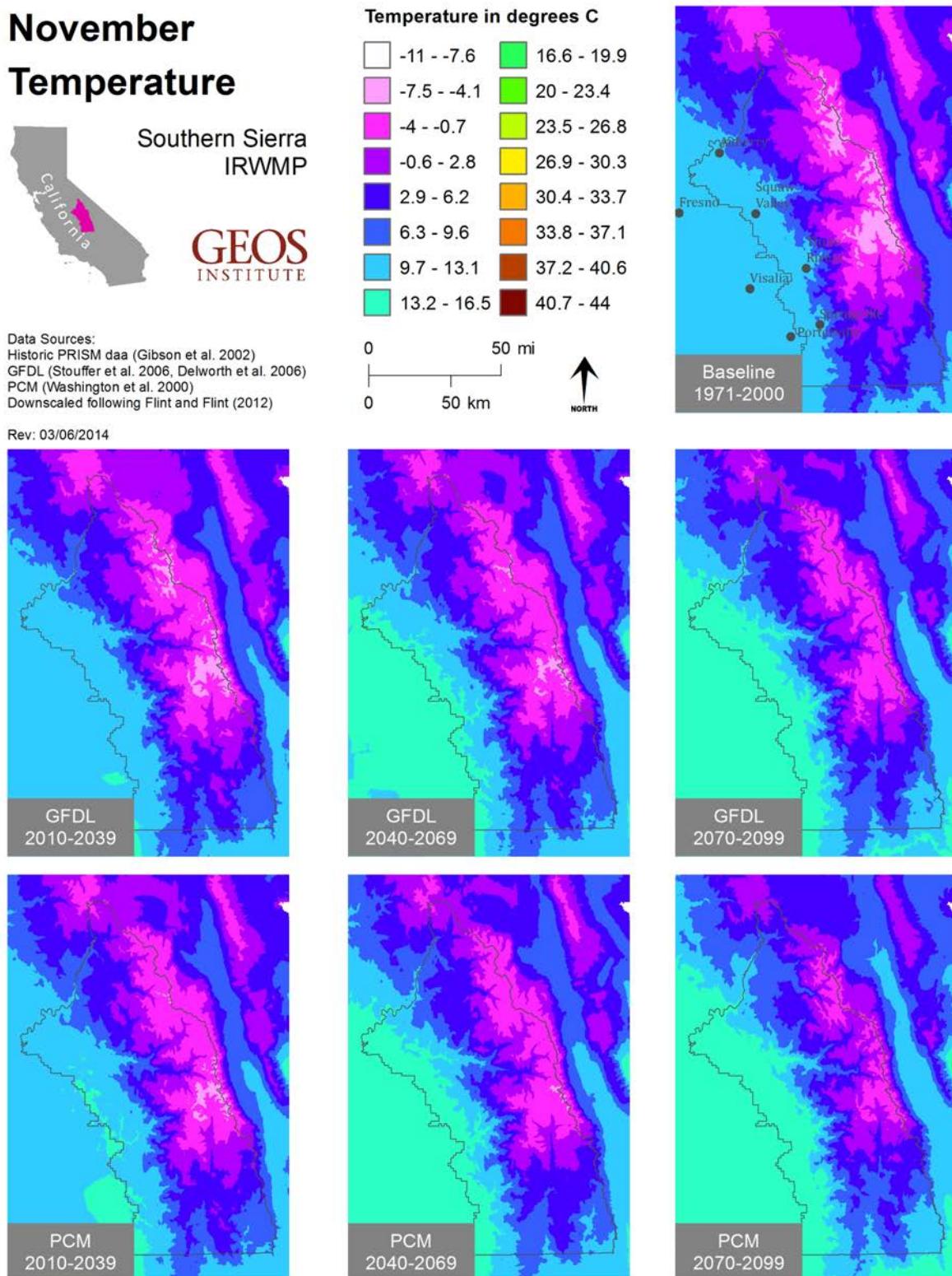


Figure 14. Average December temperature across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

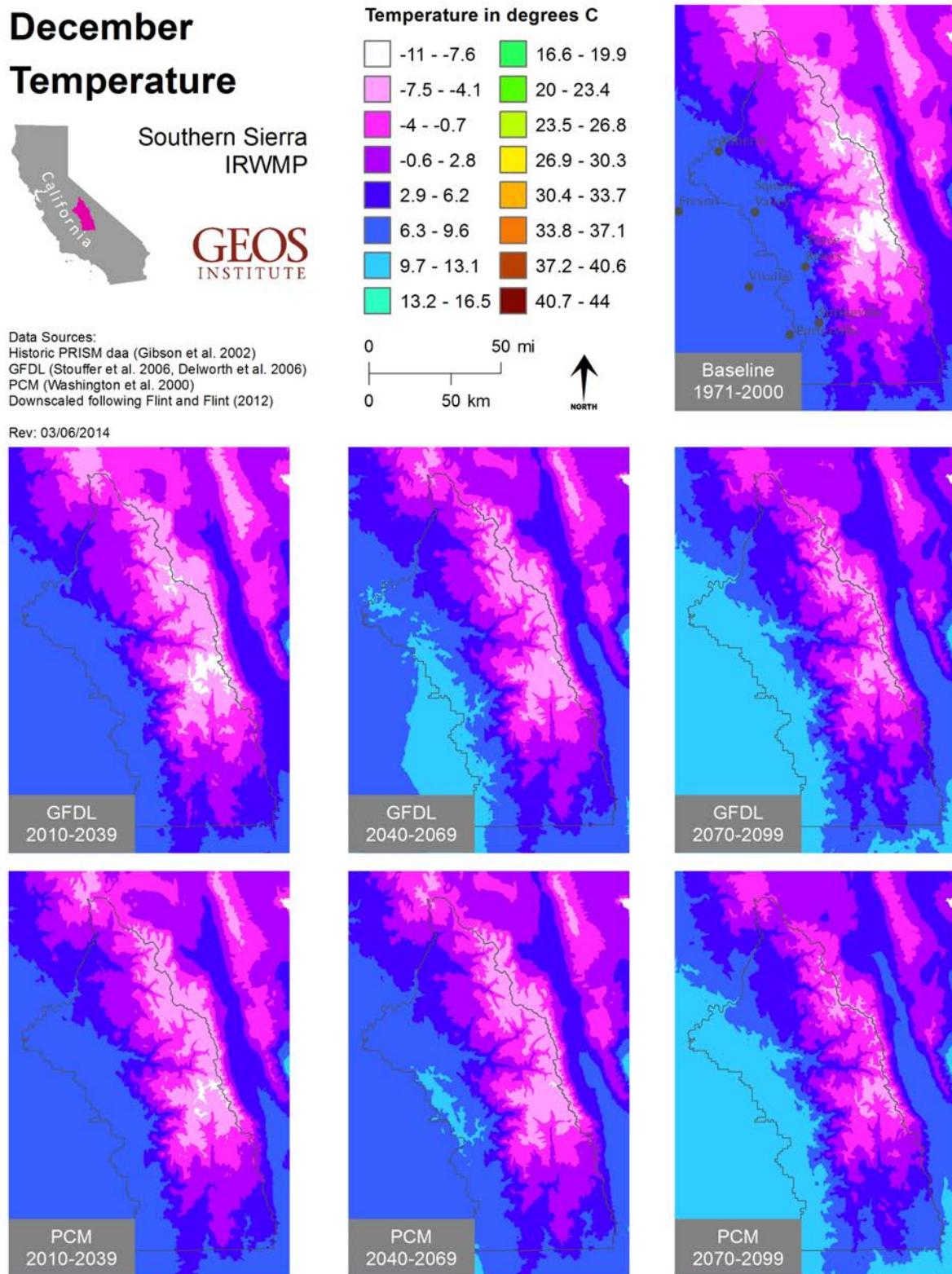


Figure 15. Average annual precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.



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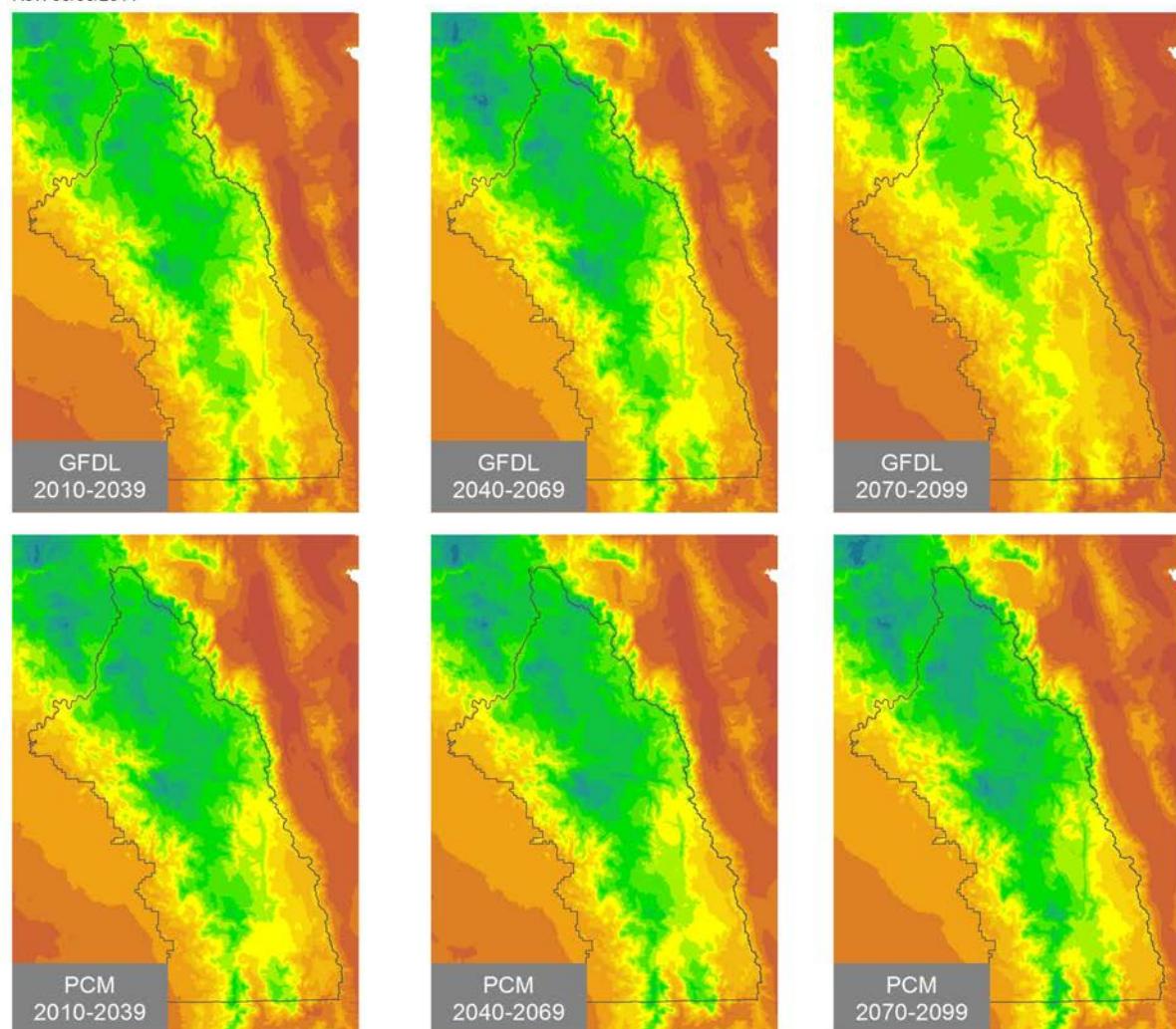


Figure 16. Average January precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

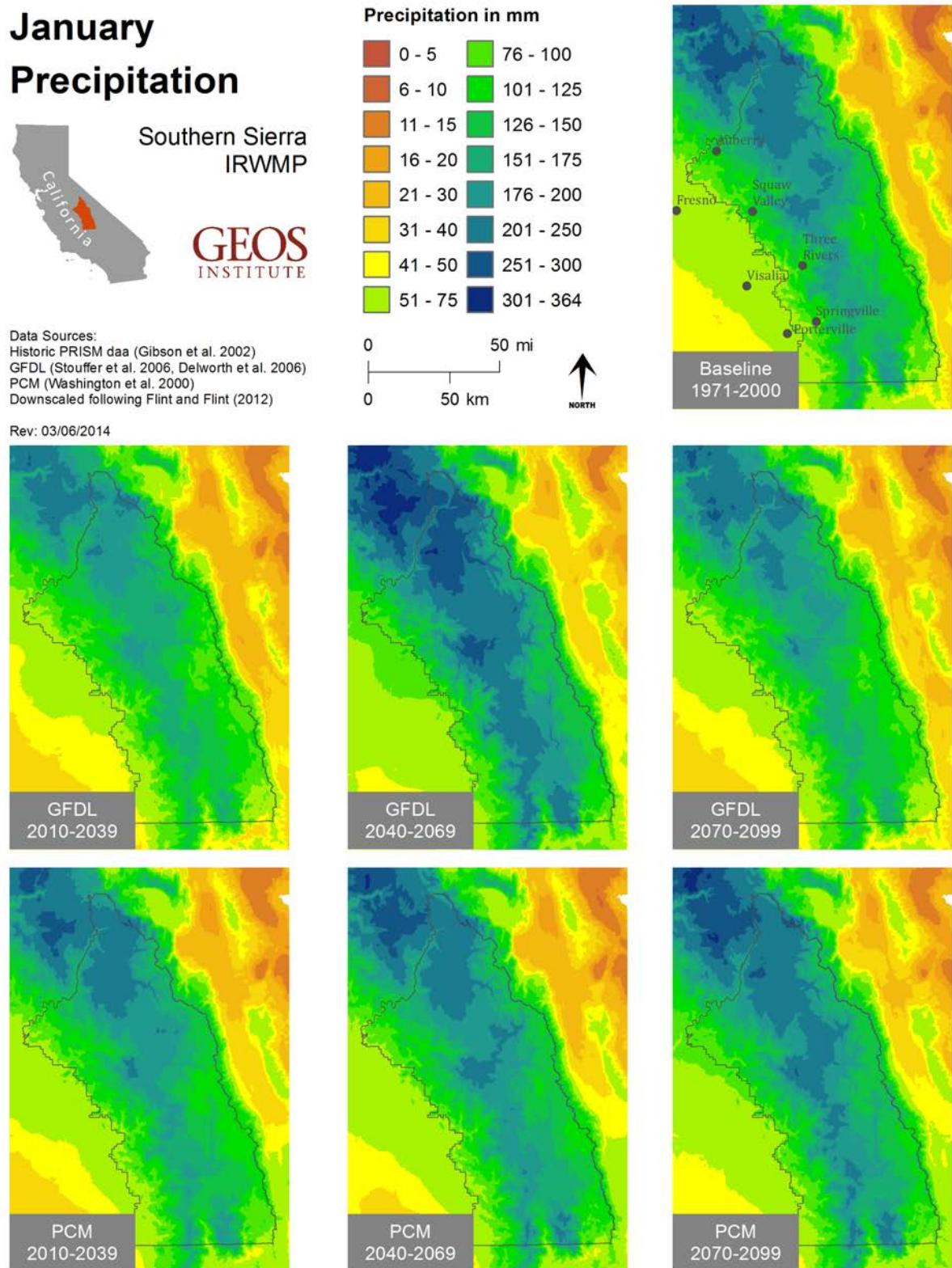


Figure 17. Average February precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

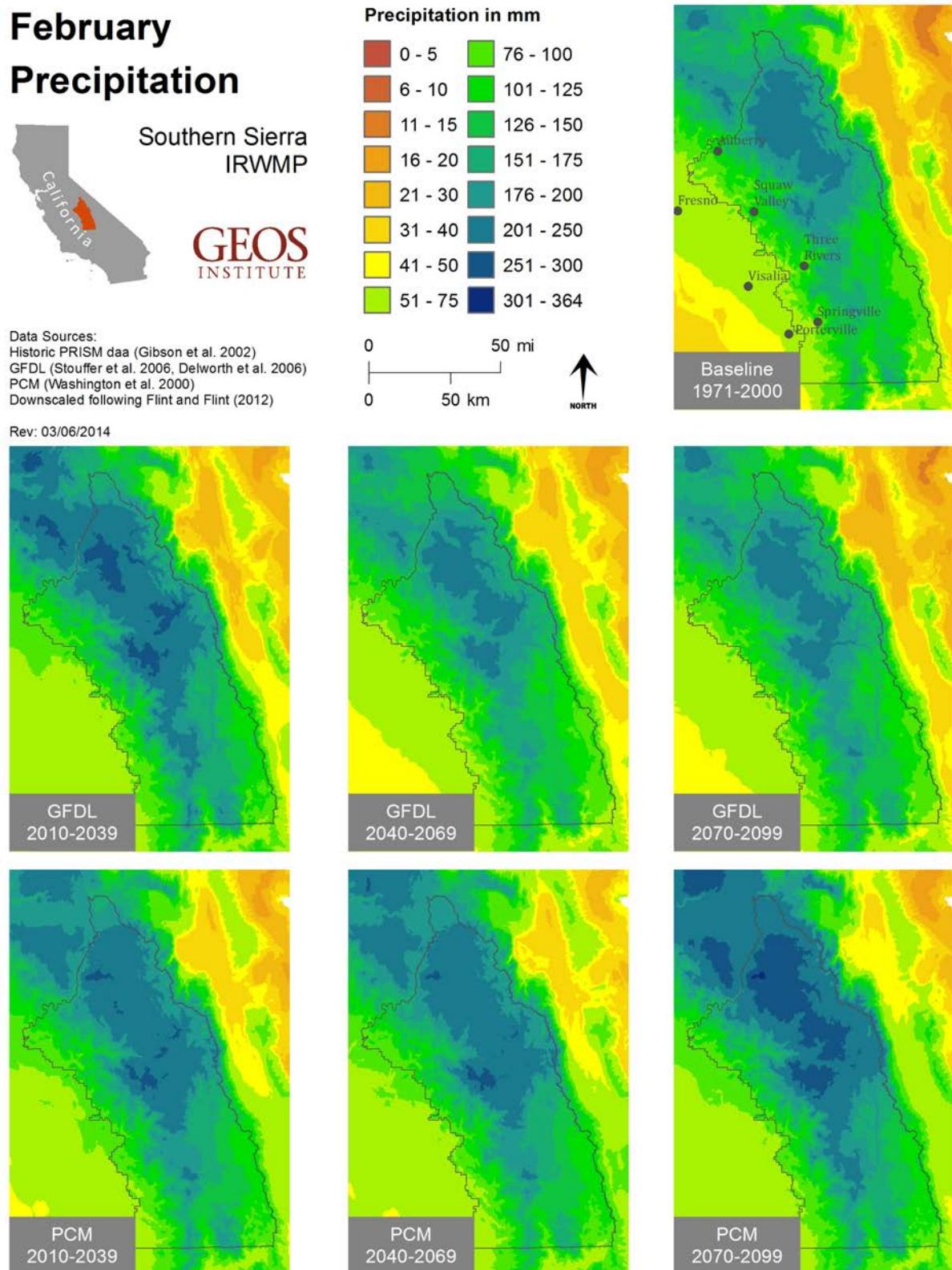


Figure 18. Average March precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

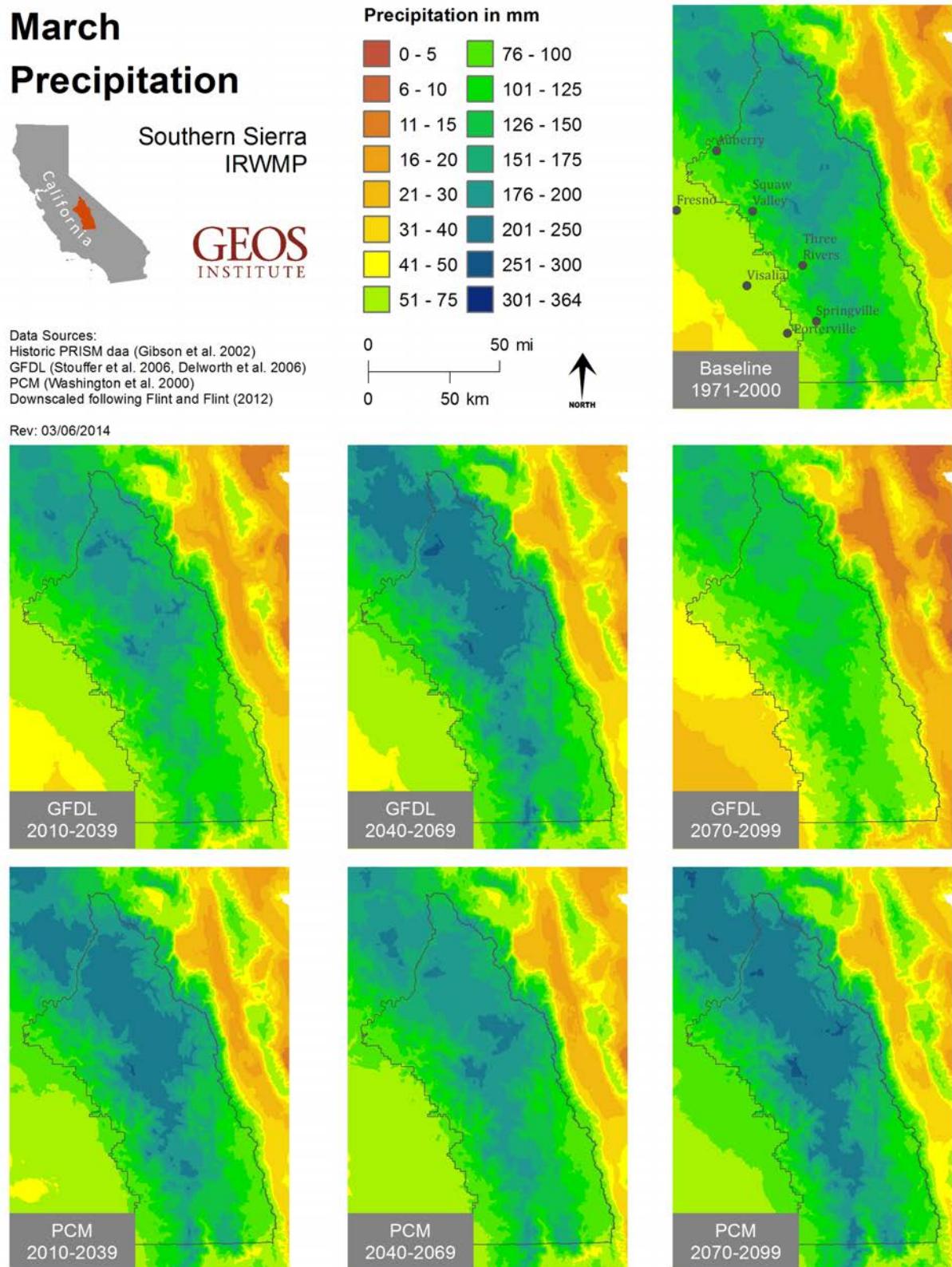


Figure 19. Average April precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

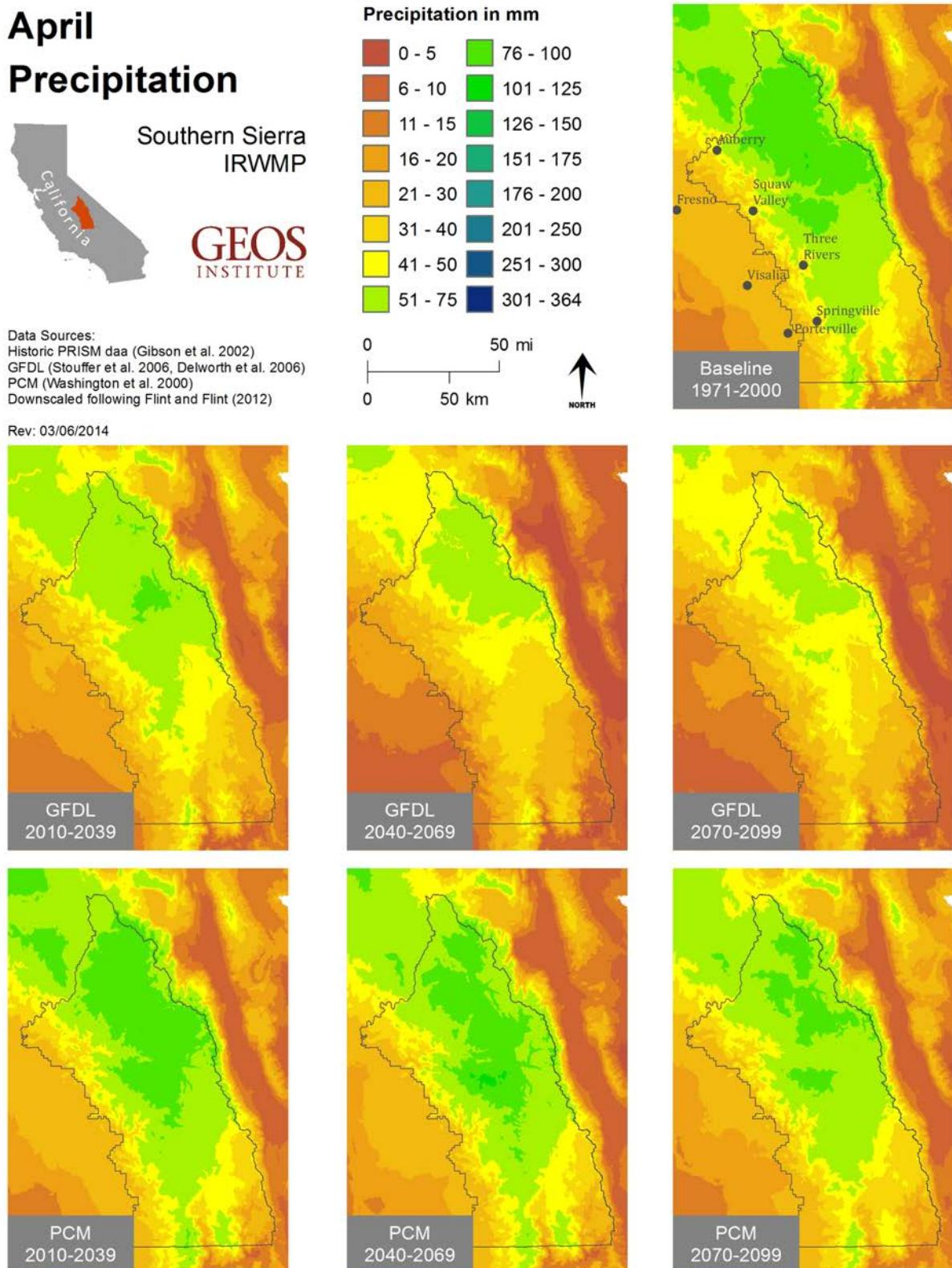


Figure 20. Average May precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

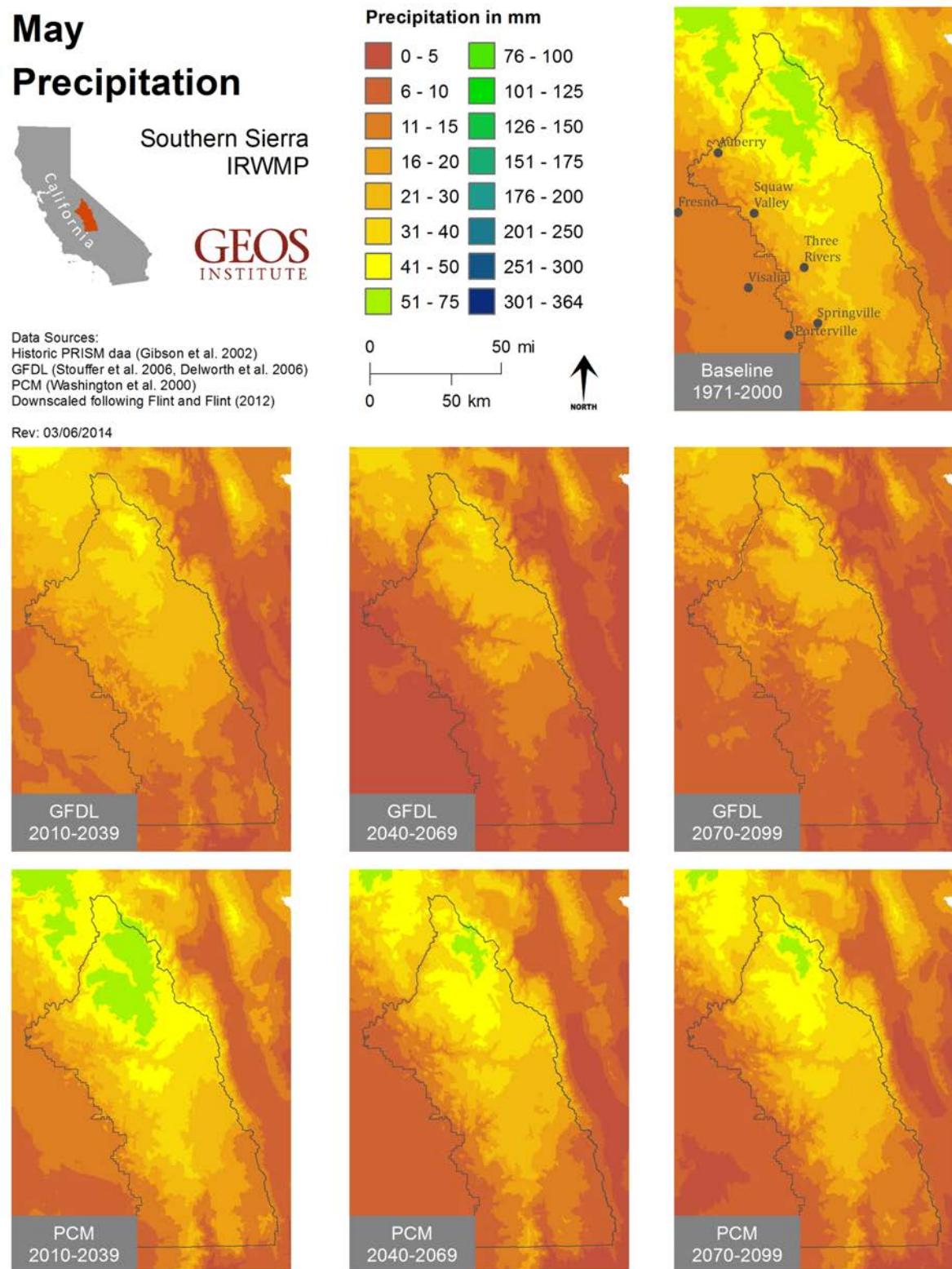


Figure 21. Average June precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

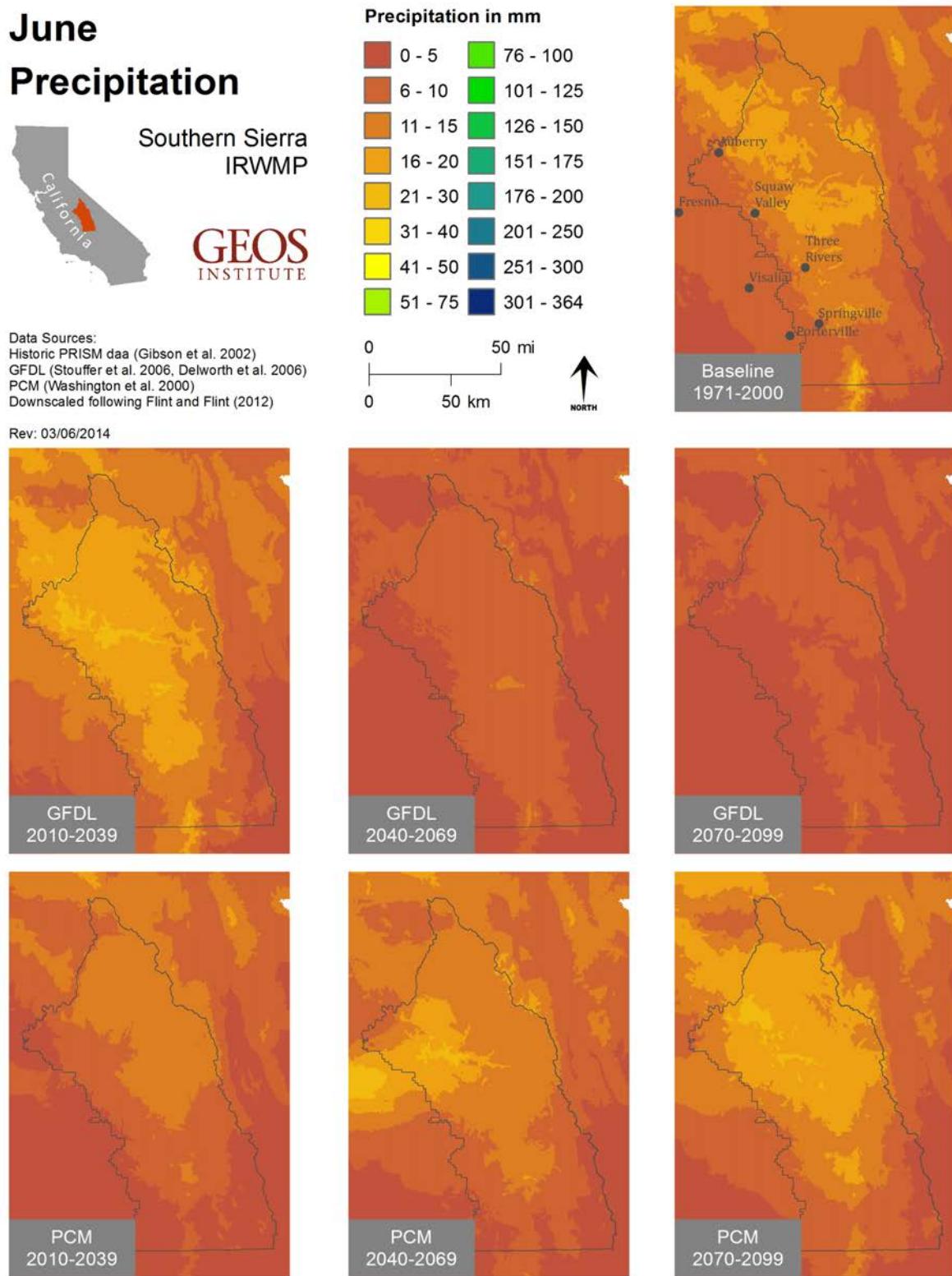


Figure 22. Average July precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

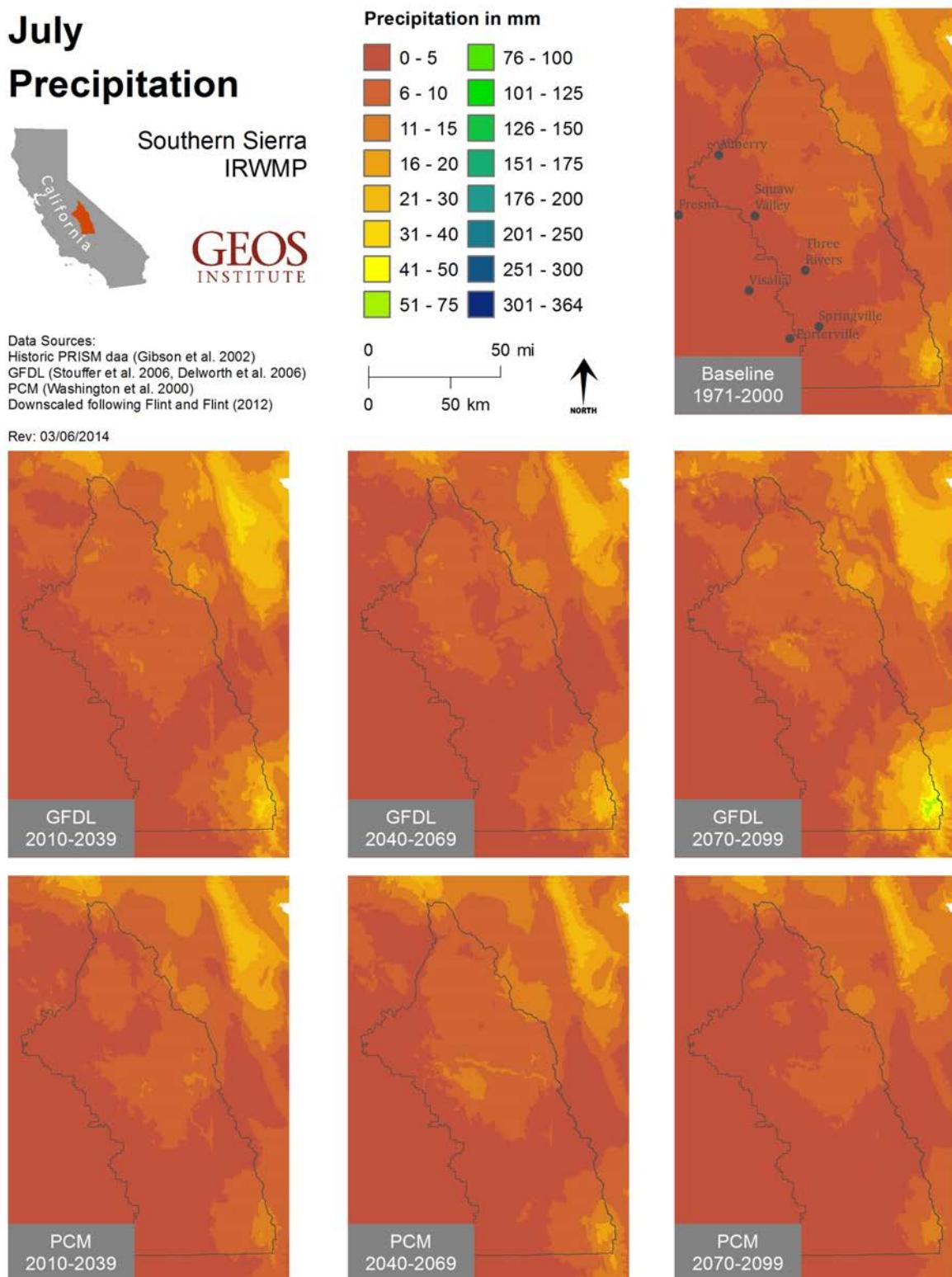


Figure 23. Average August precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

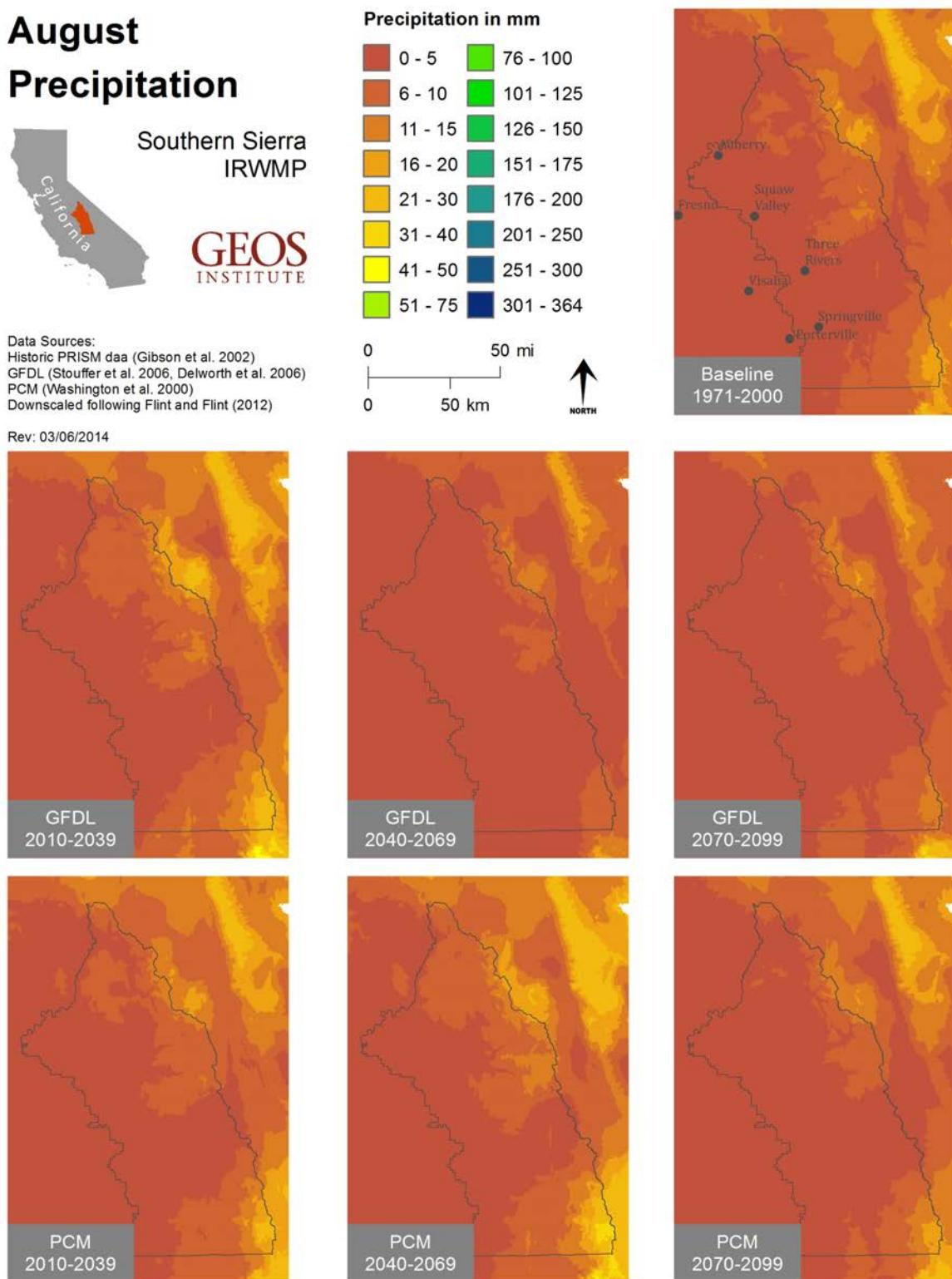


Figure 24. Average September precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

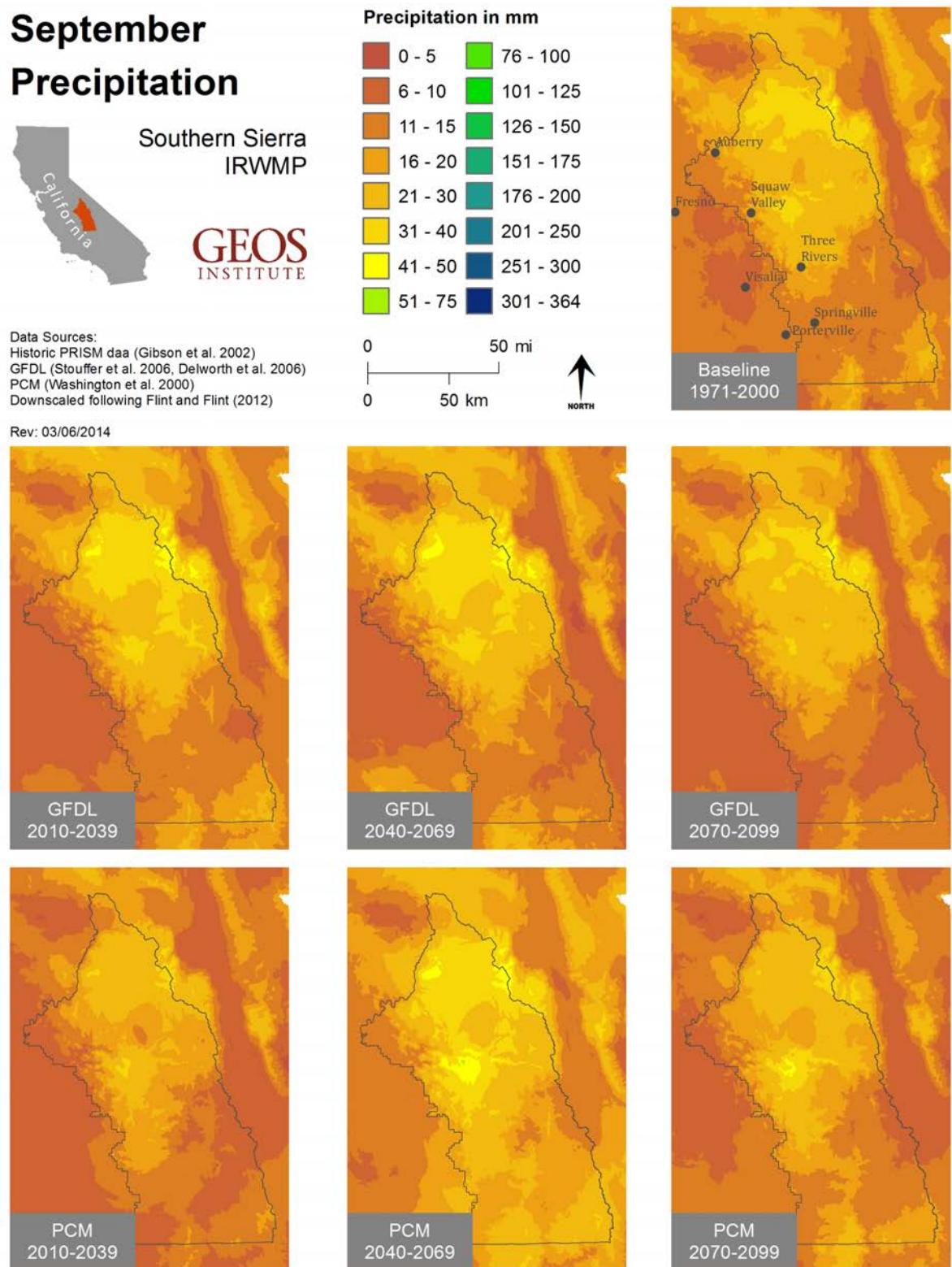


Figure 25. Average October precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

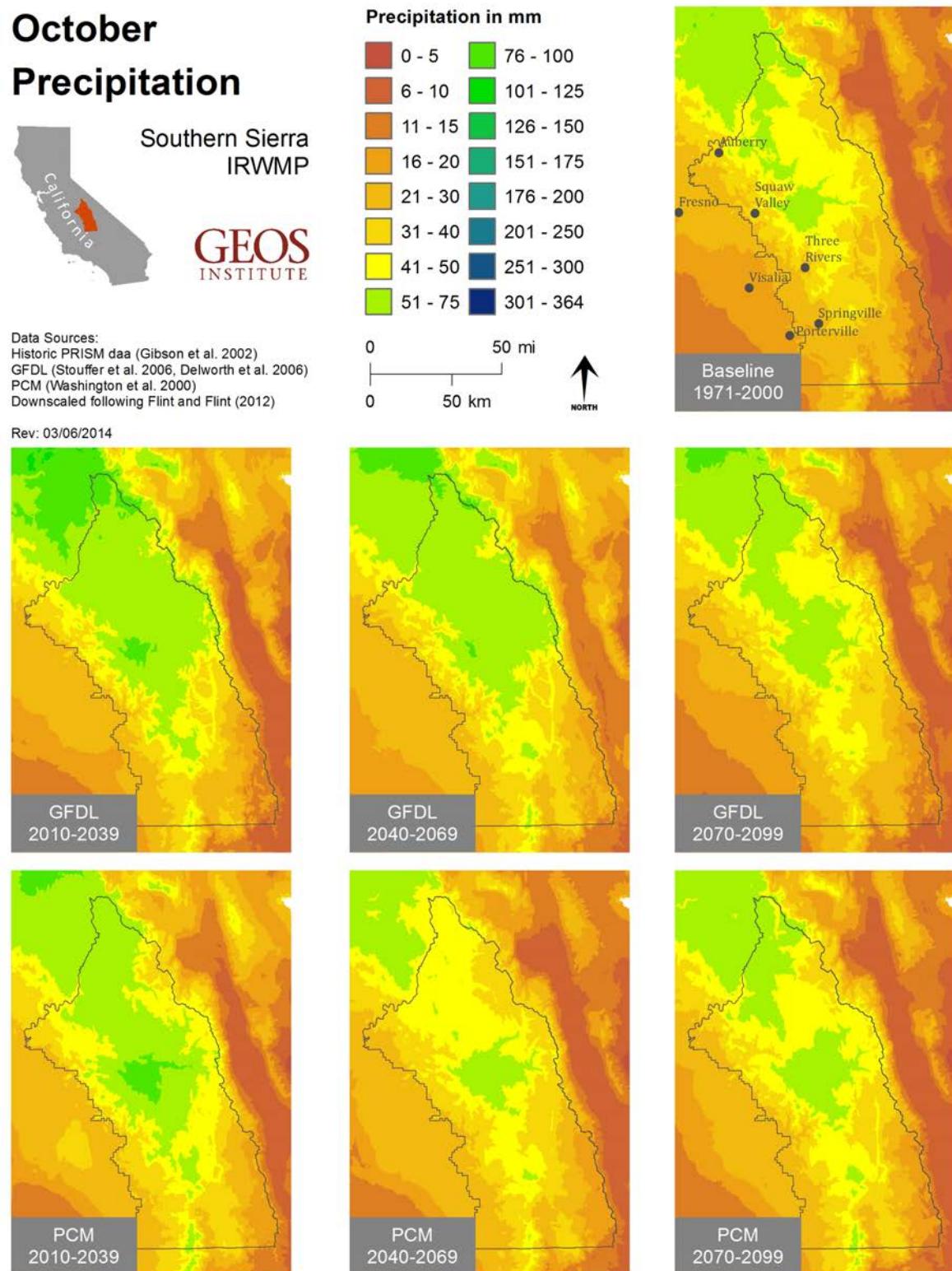


Figure 26. Average November precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

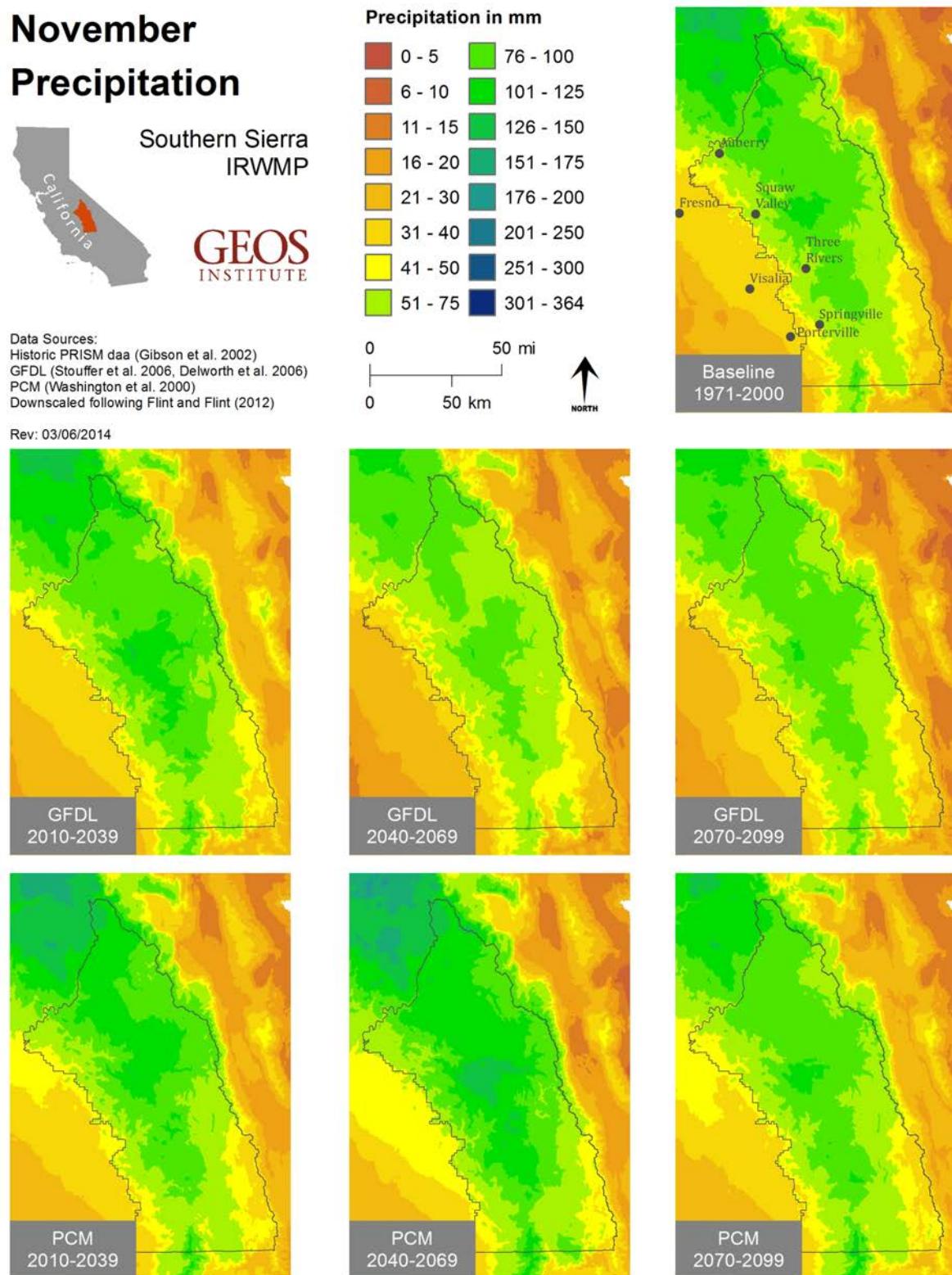


Figure 27. Average December precipitation across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

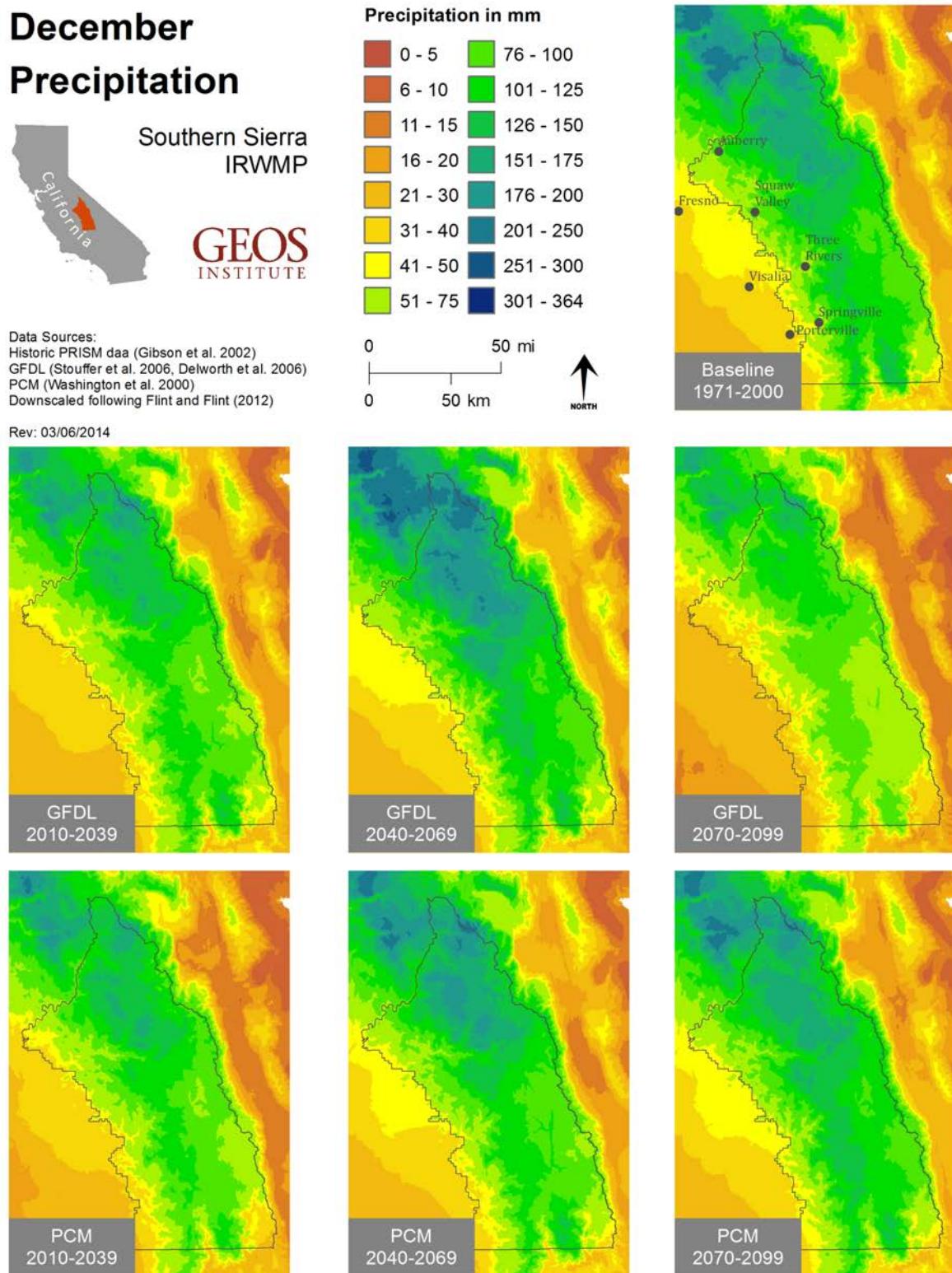


Figure 28. January runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

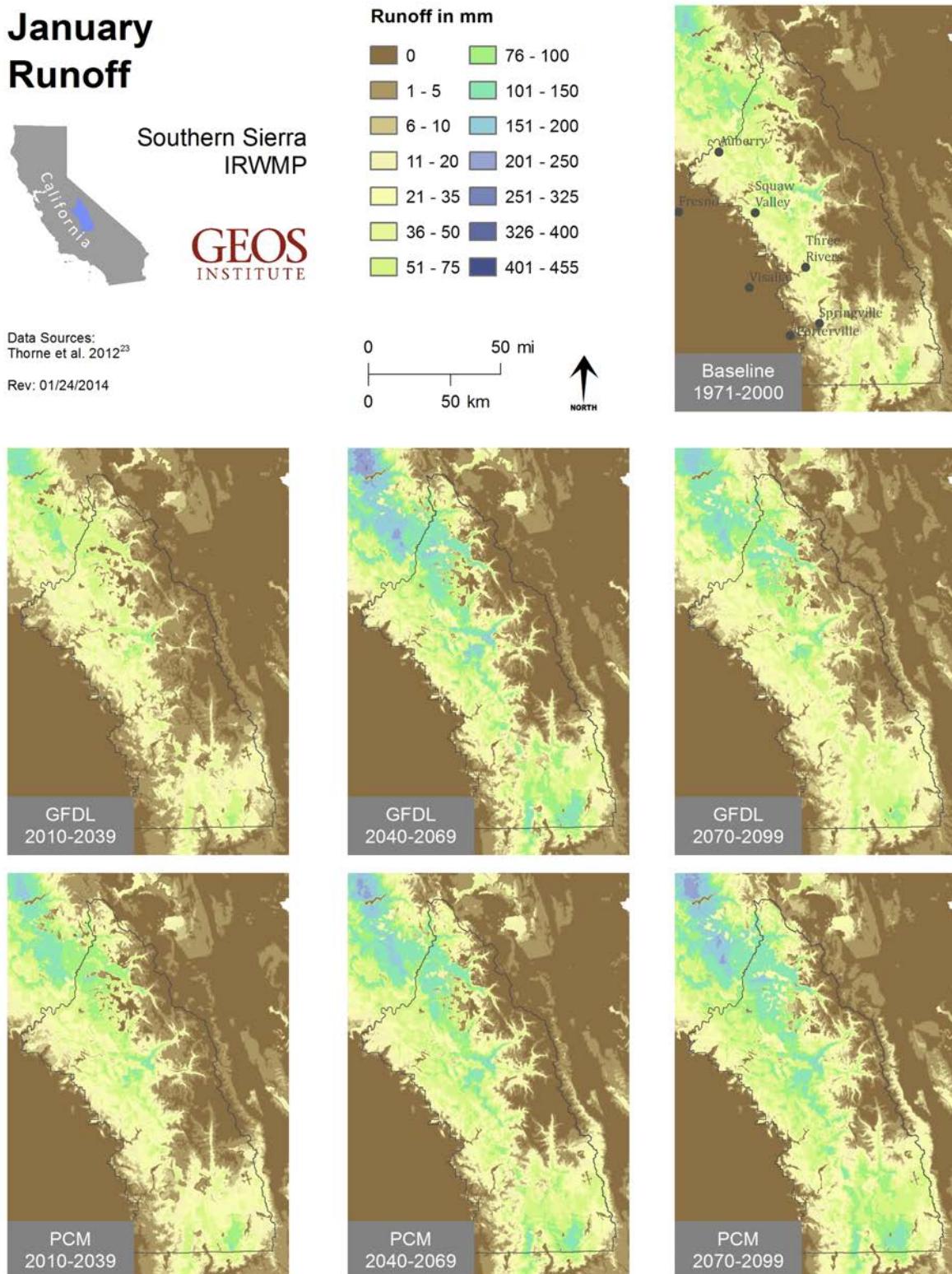


Figure 29. February runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

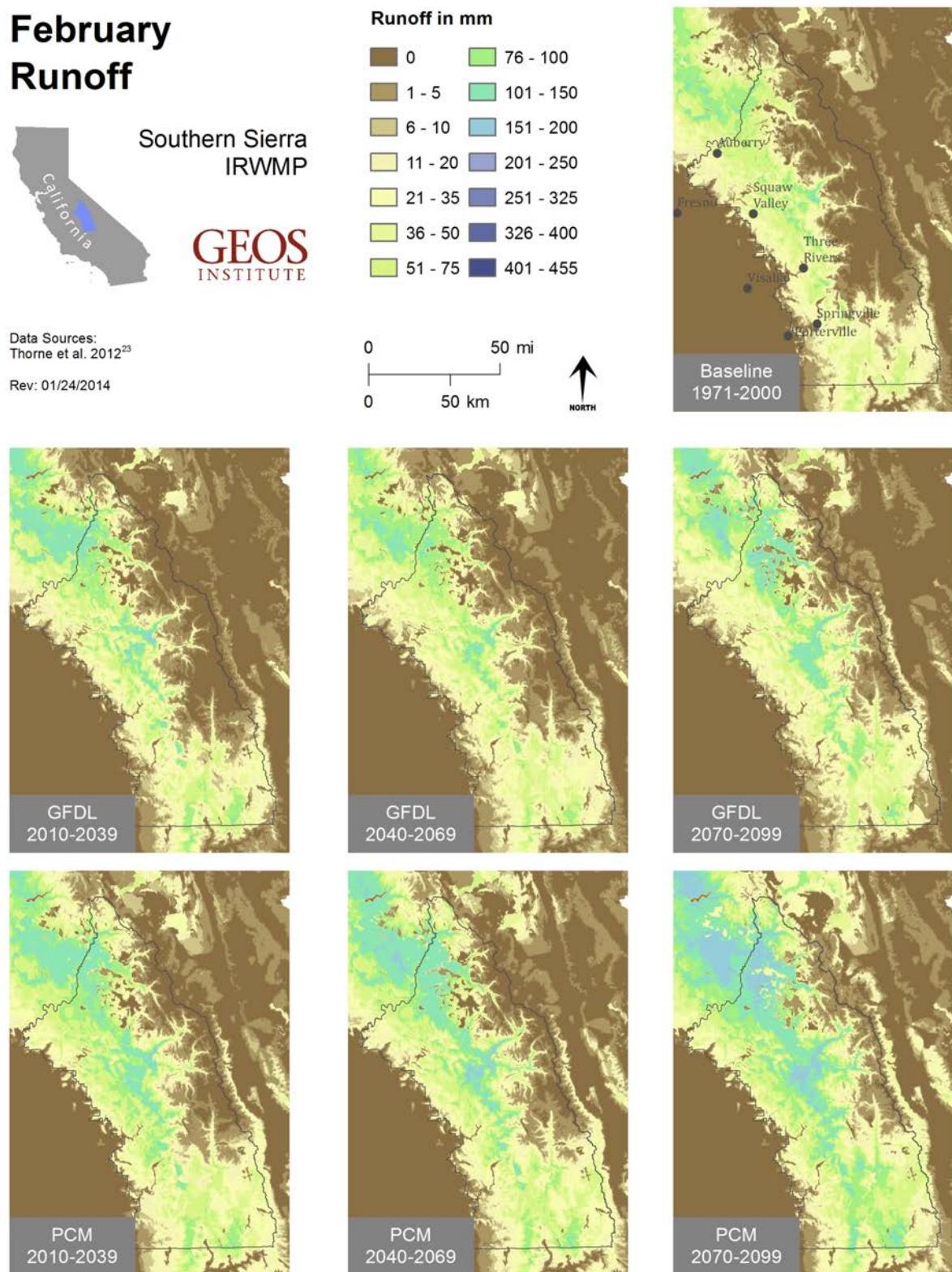


Figure 30. March runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

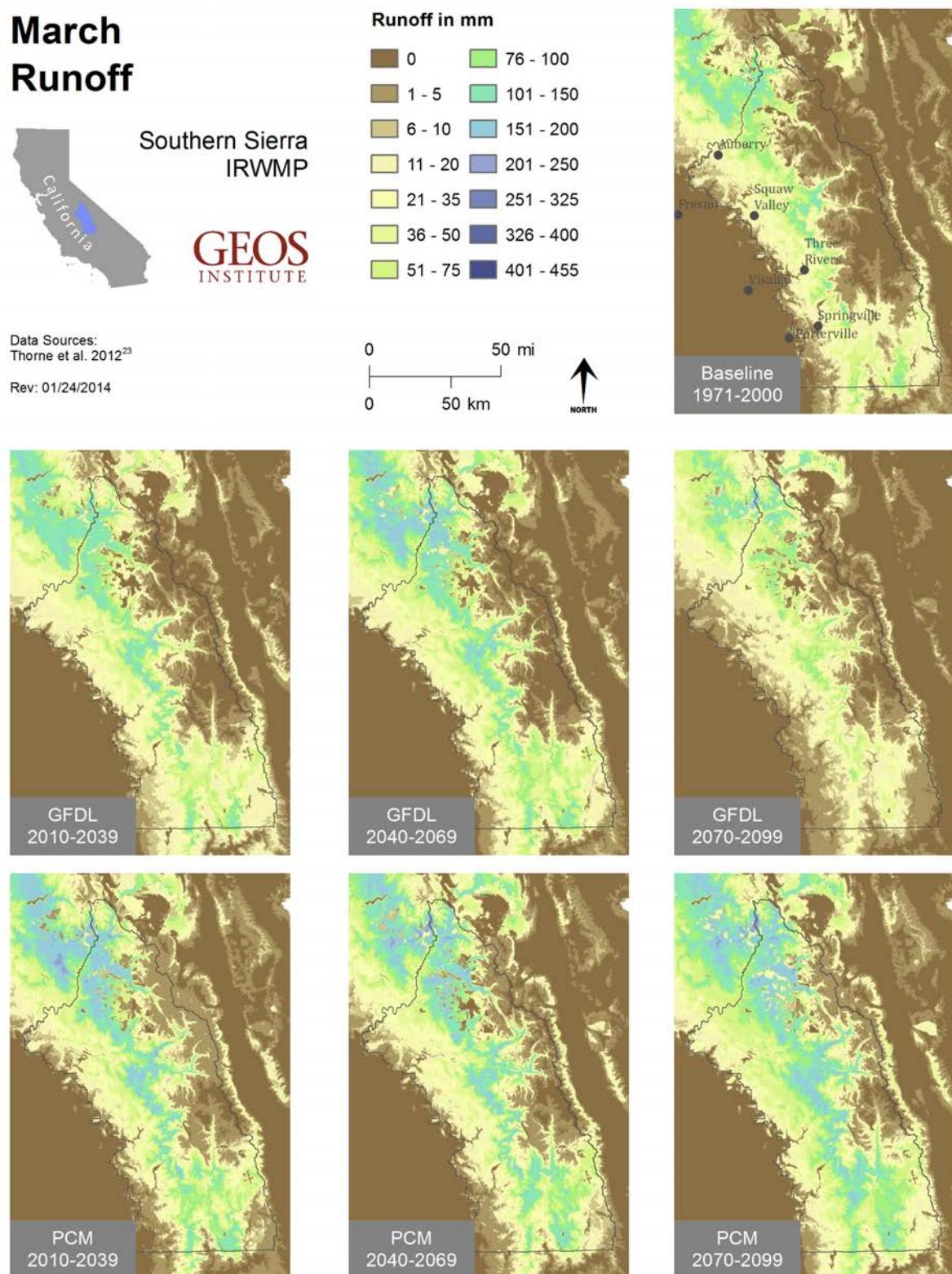


Figure 31. April runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

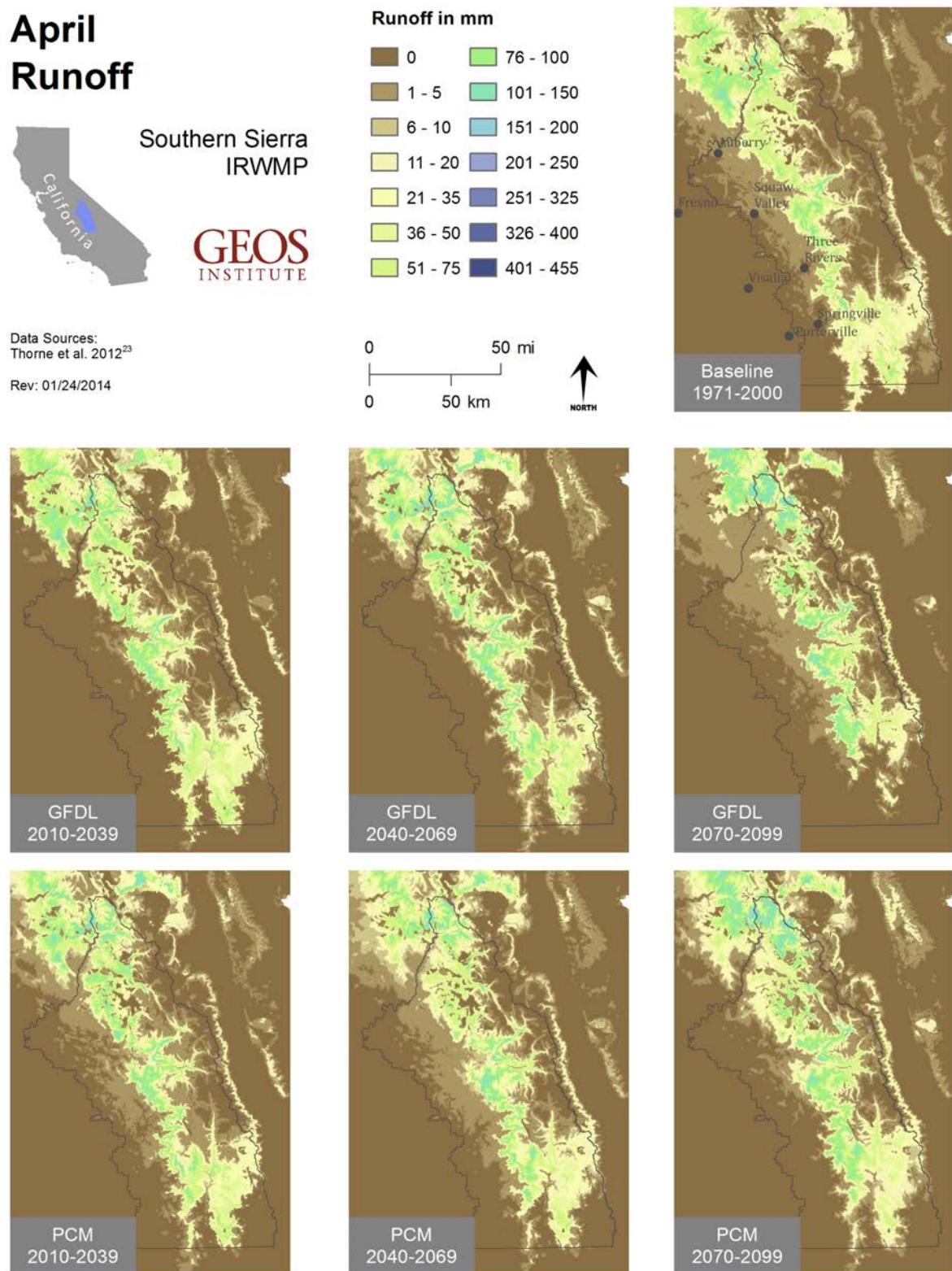


Figure 32. May runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

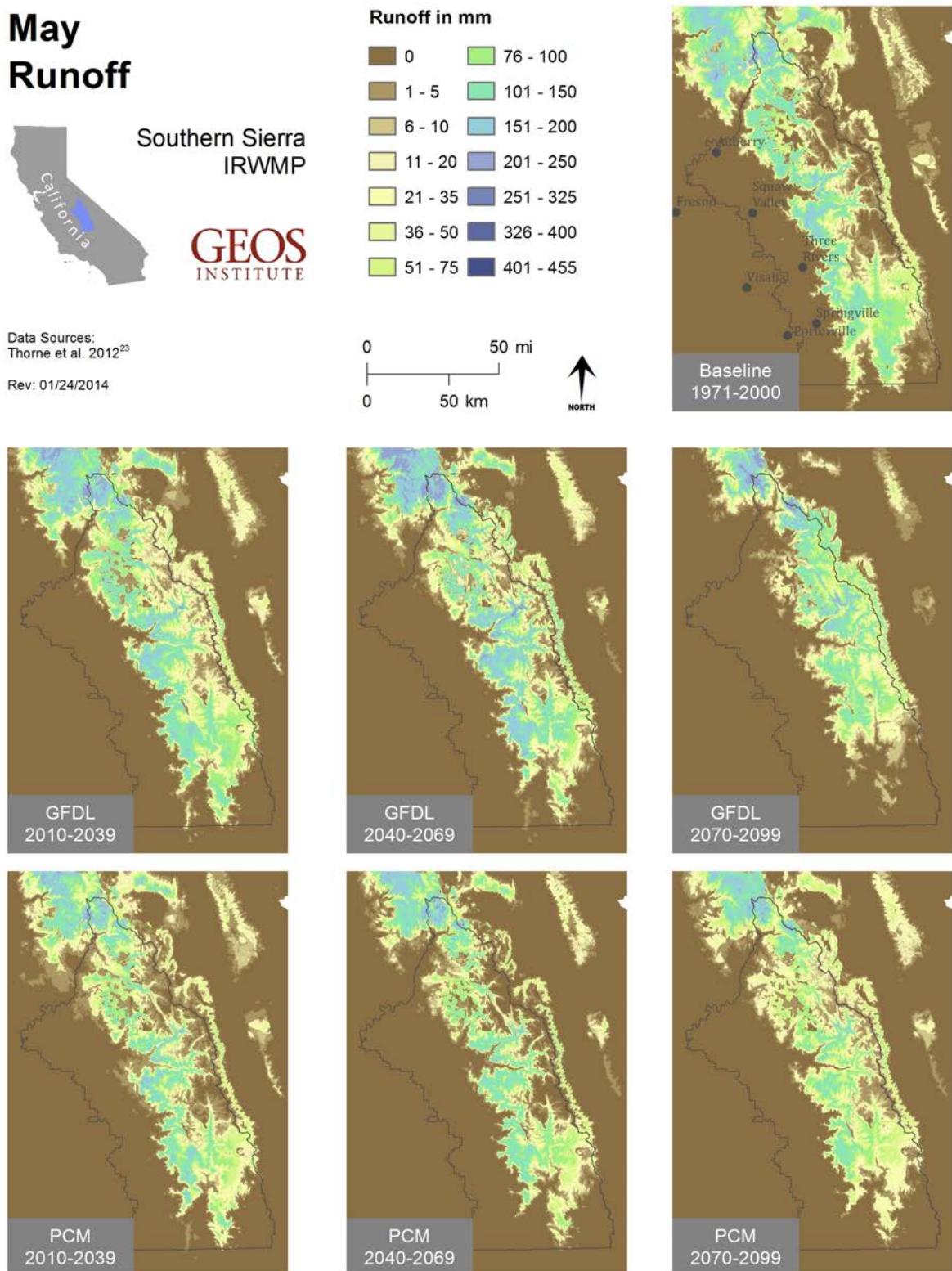


Figure 33. June runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

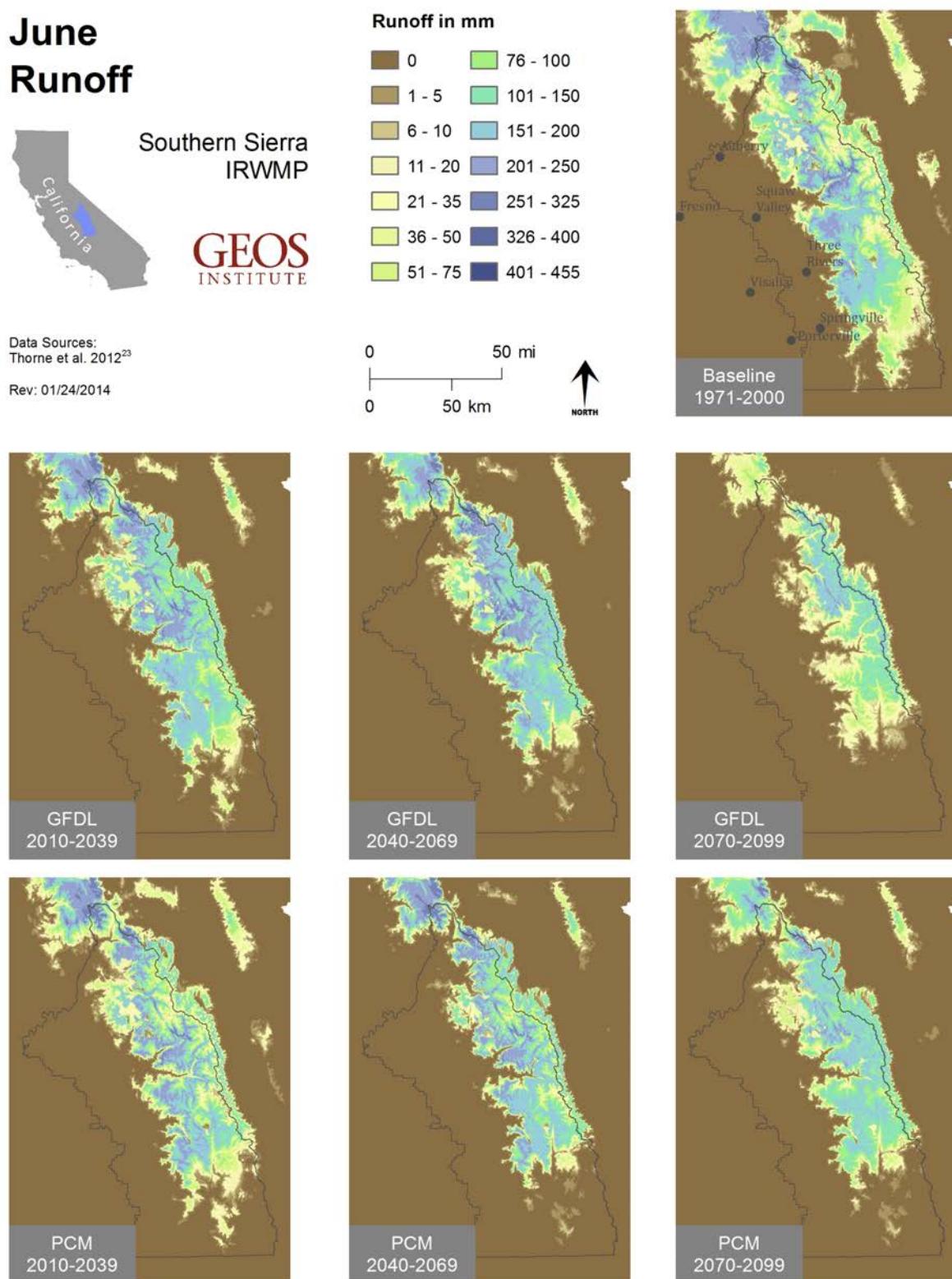


Figure 34. July runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

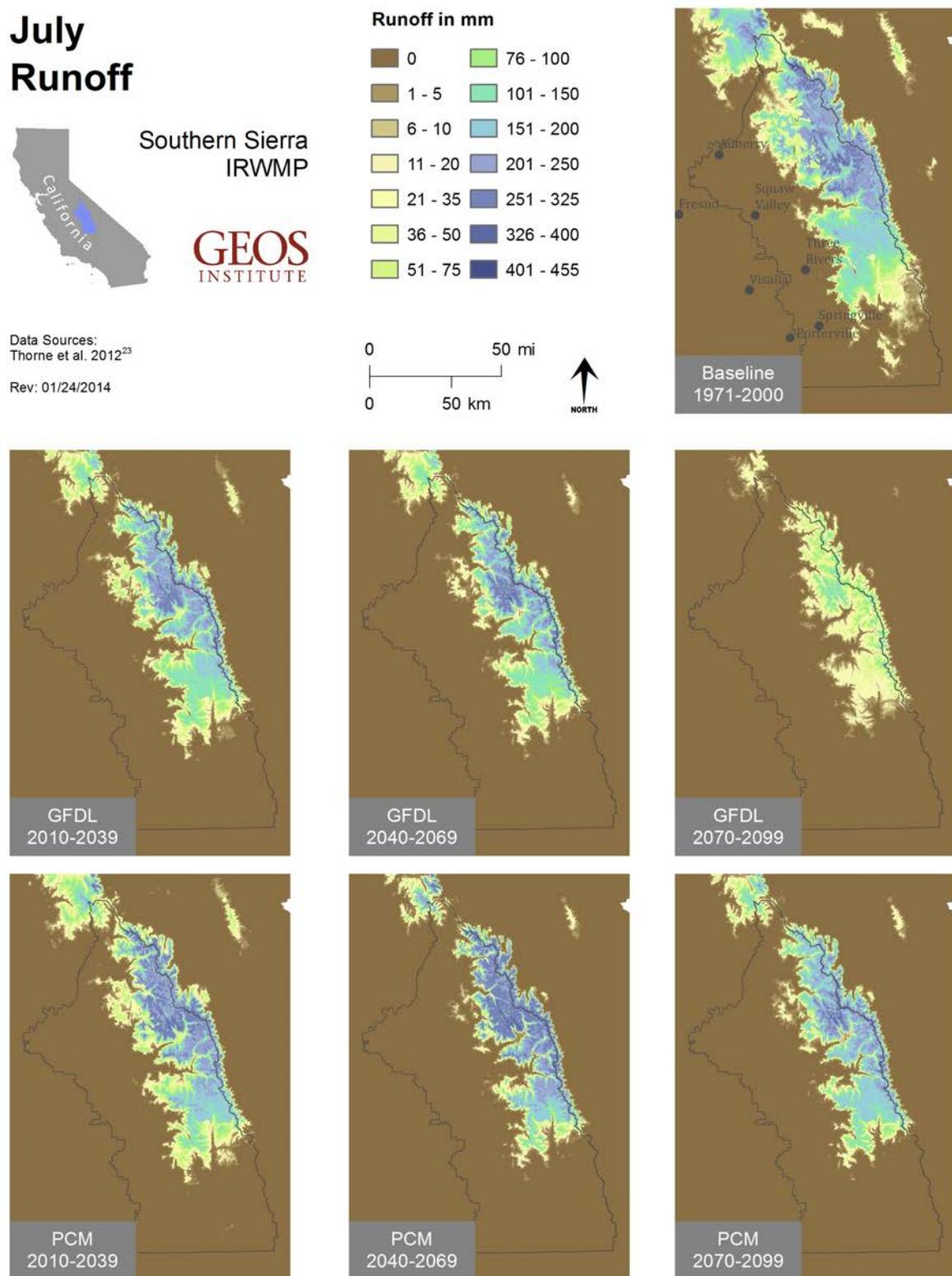


Figure 35. August runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

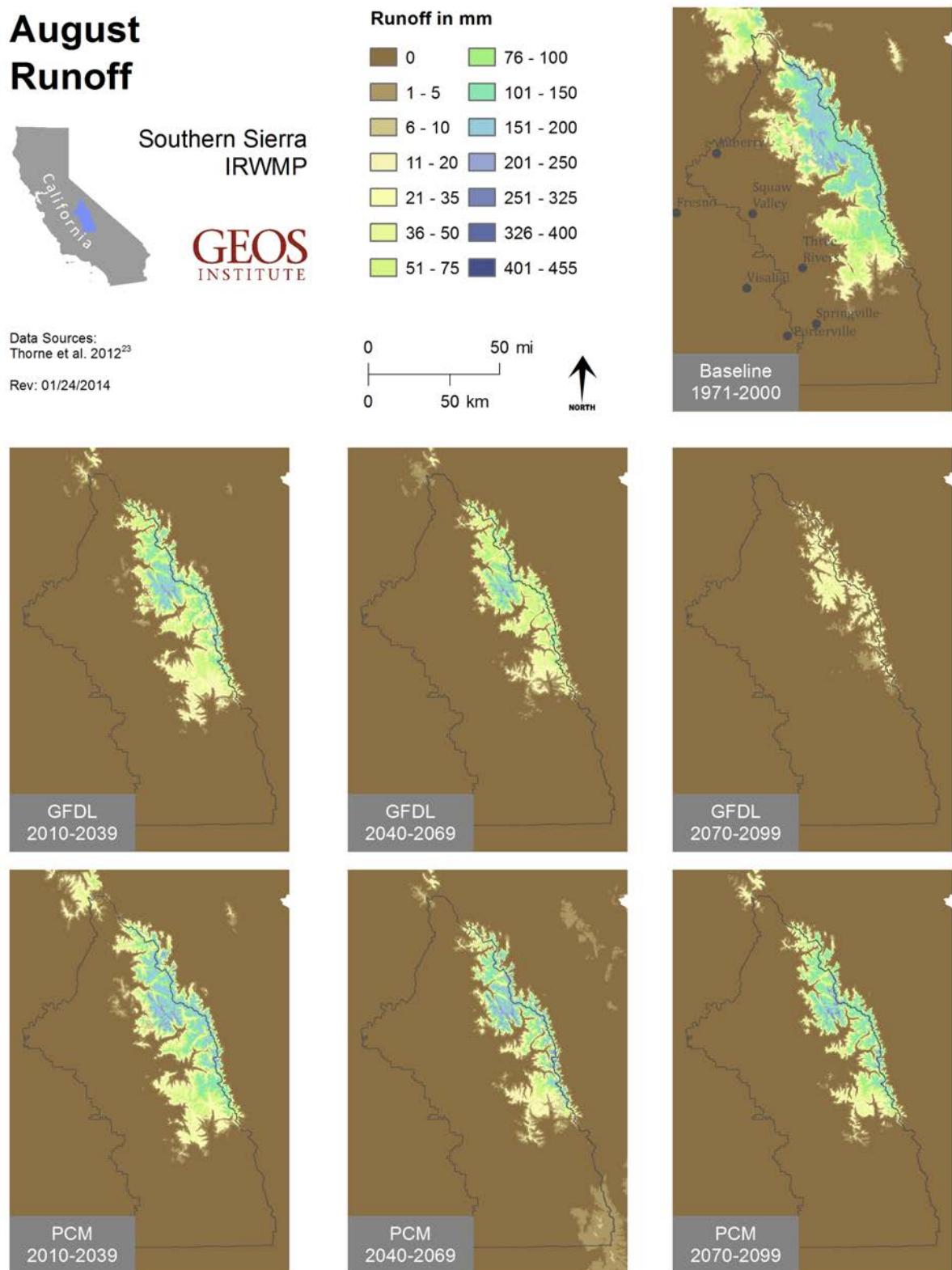


Figure 36. September runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

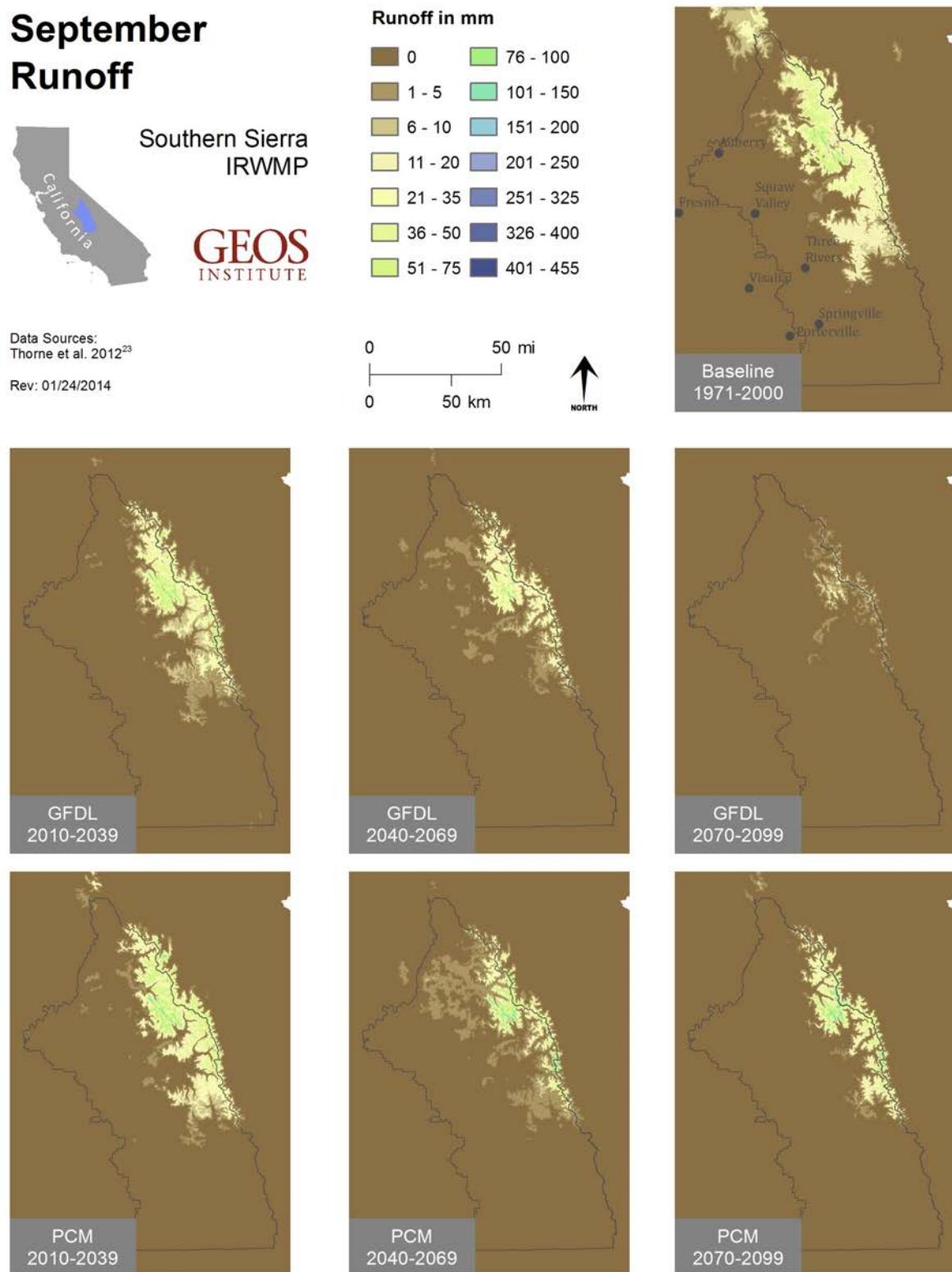


Figure 37. October runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

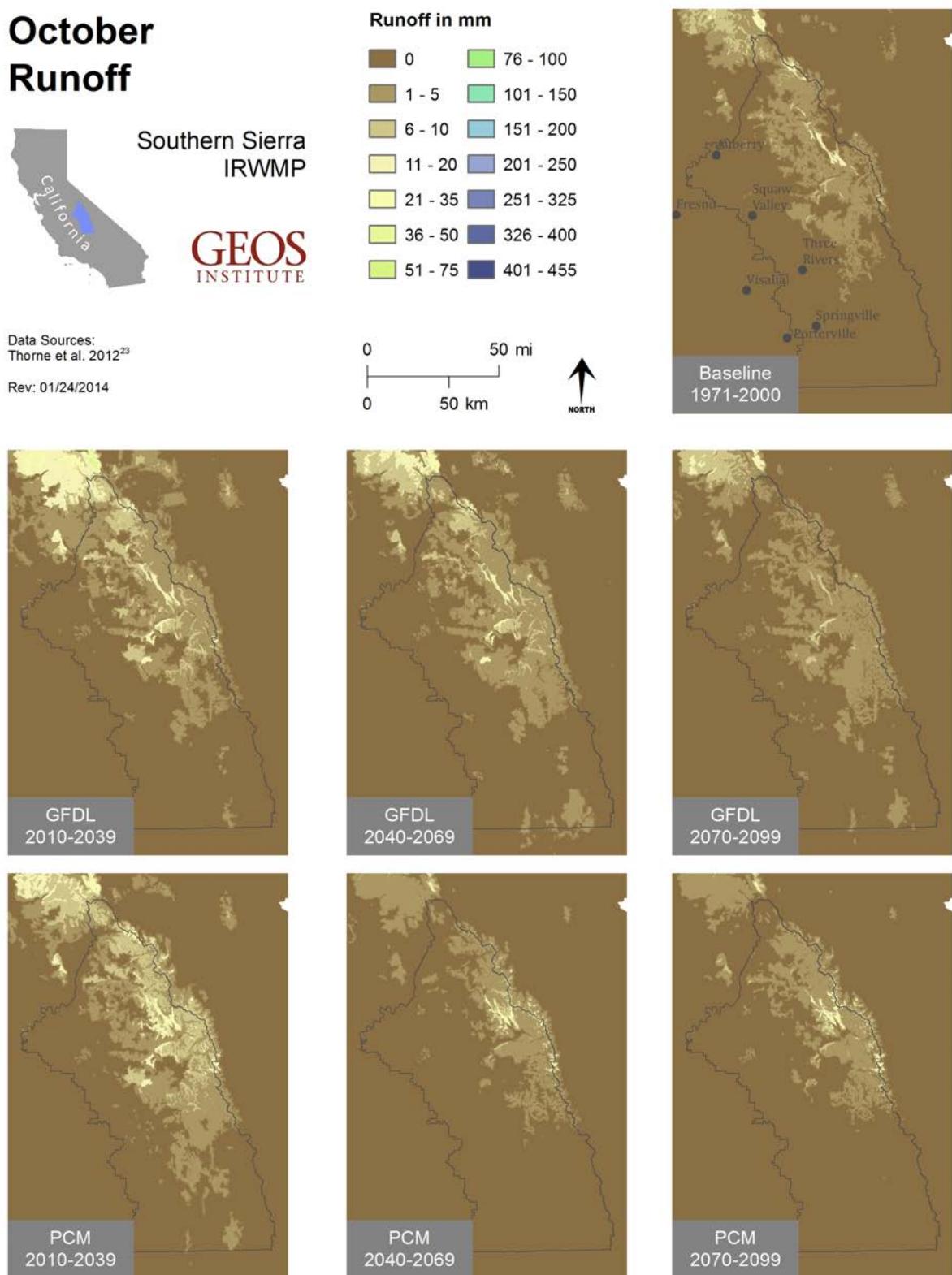


Figure 38. November runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

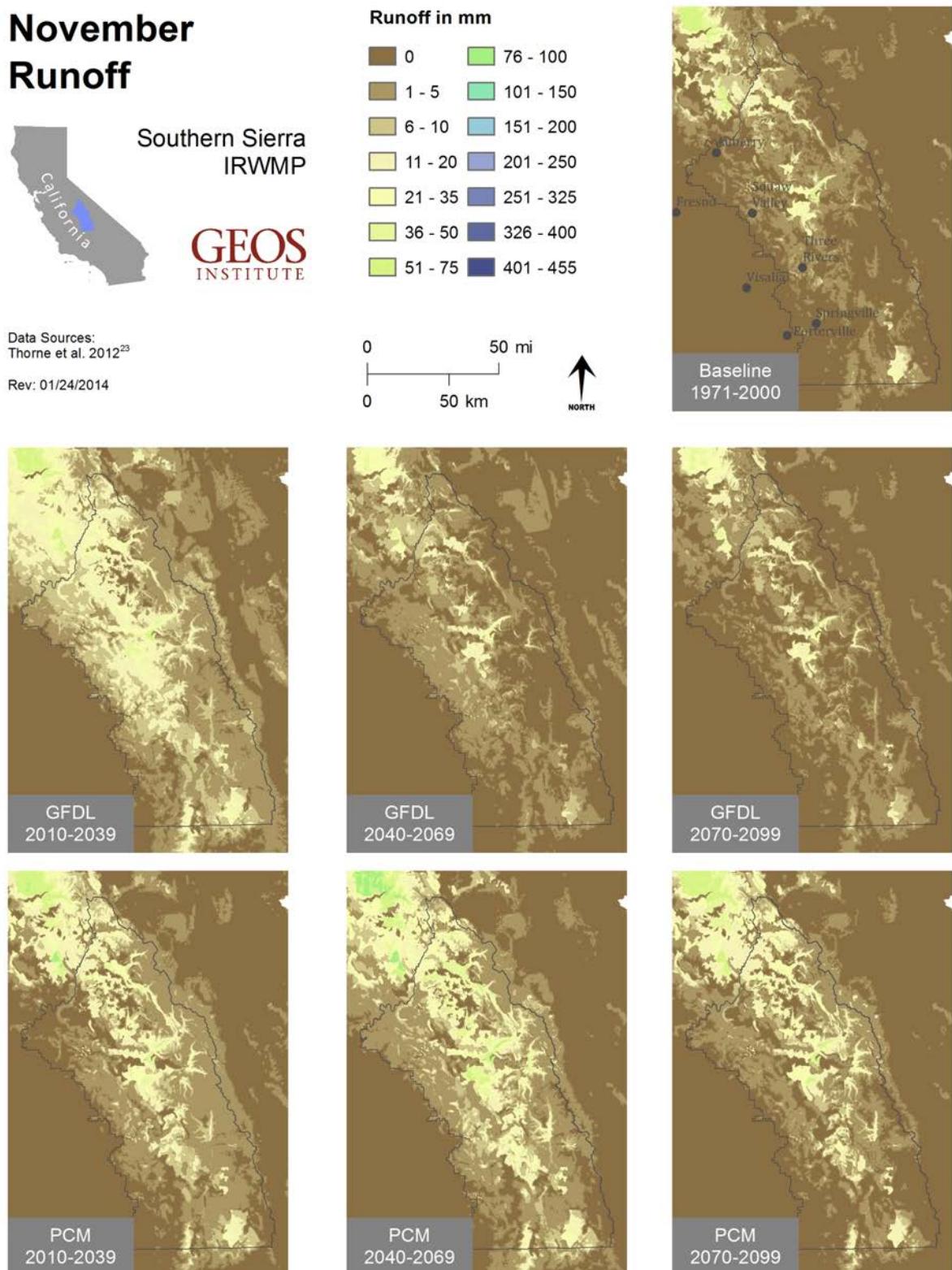


Figure 39. December runoff across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

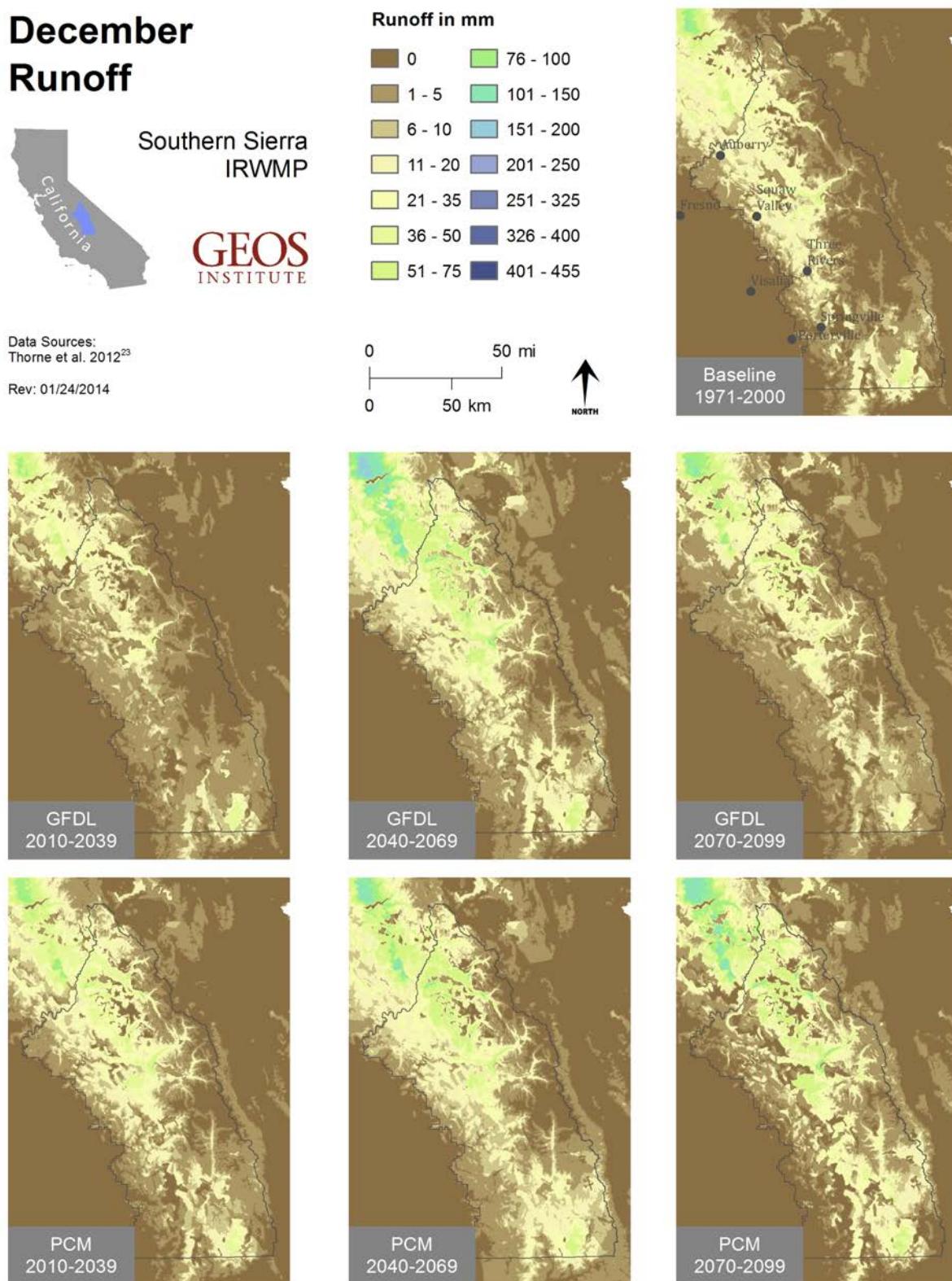


Figure 40. January snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

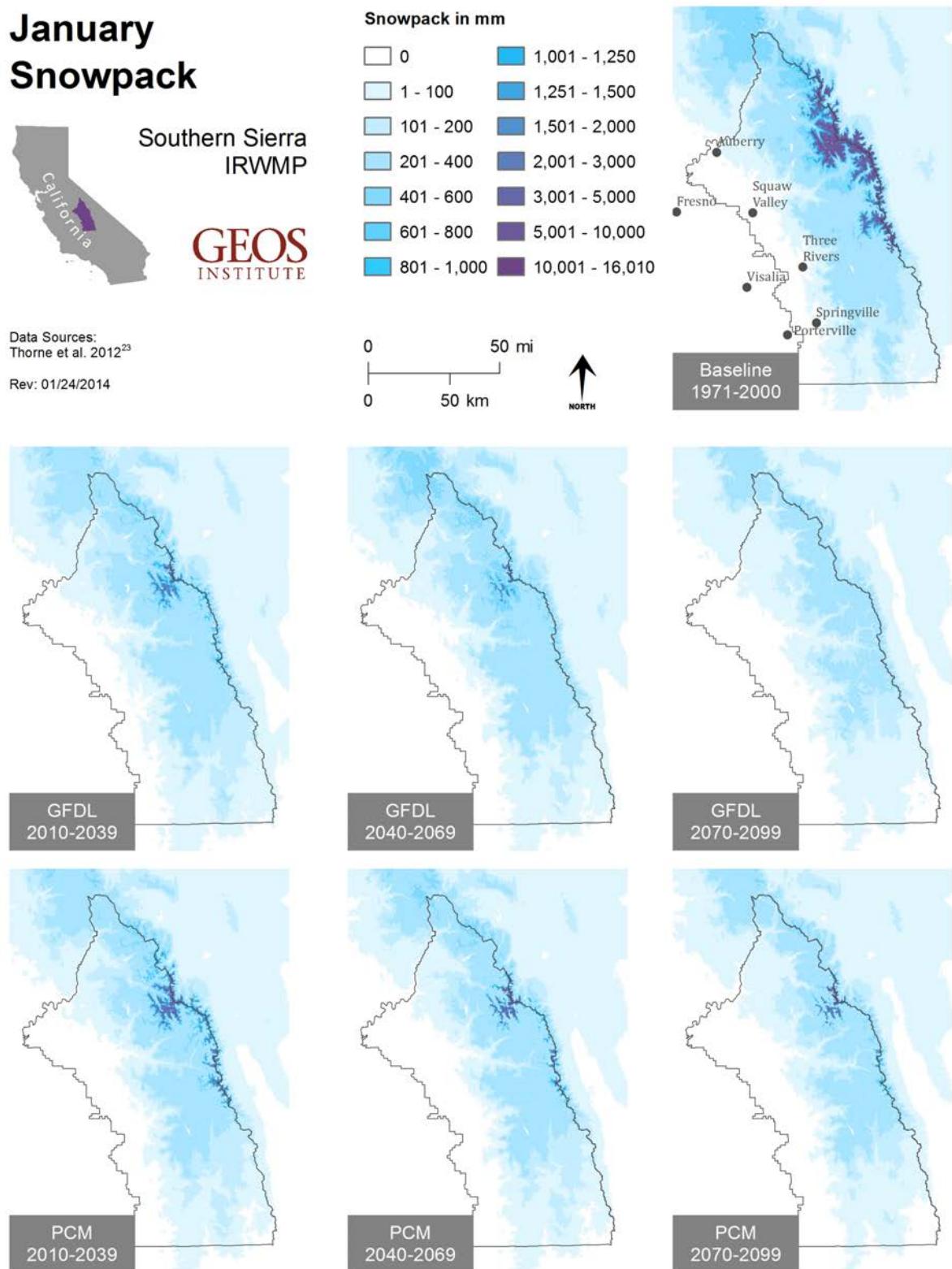


Figure 41. February snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

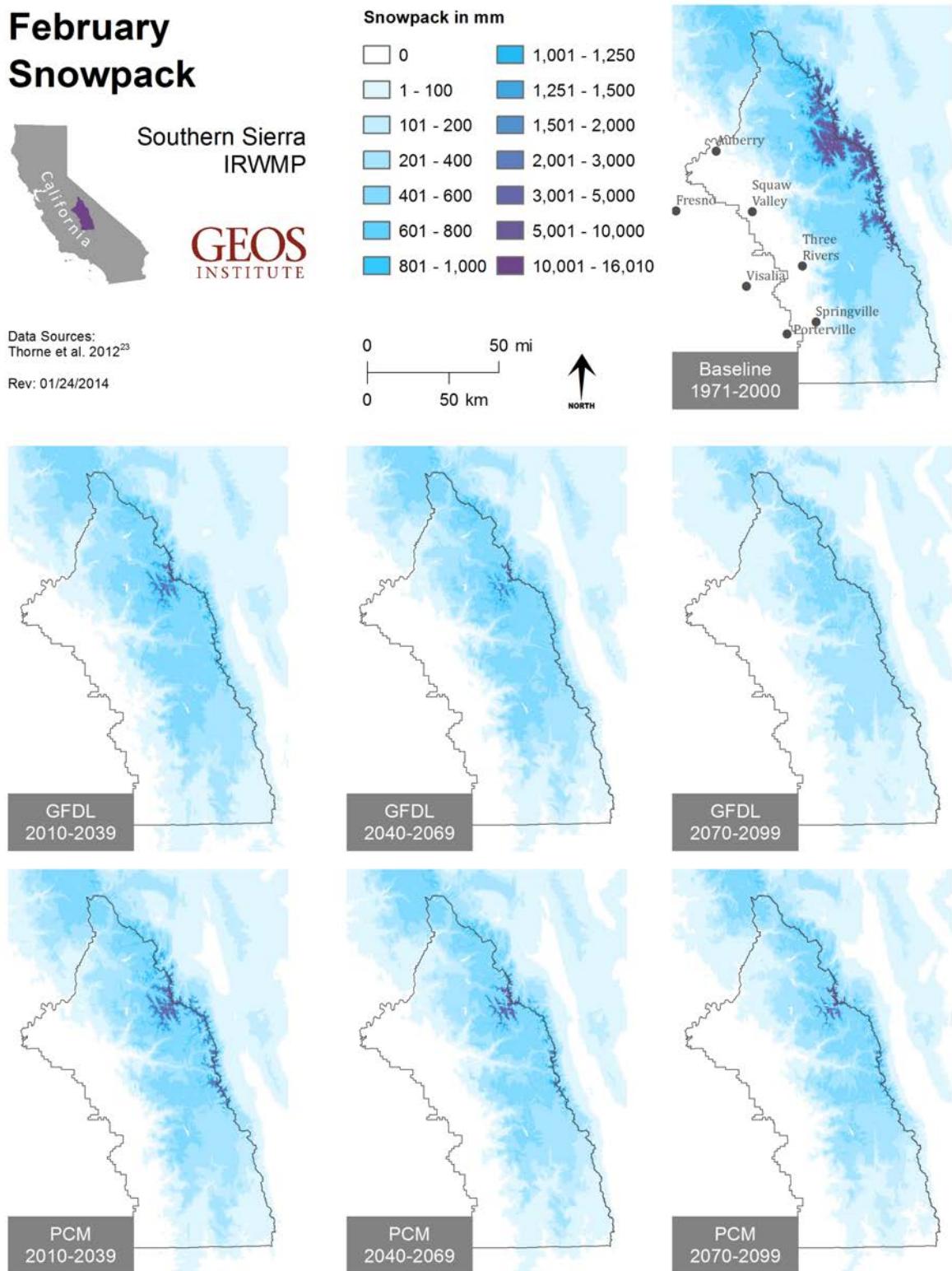


Figure 42. March snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

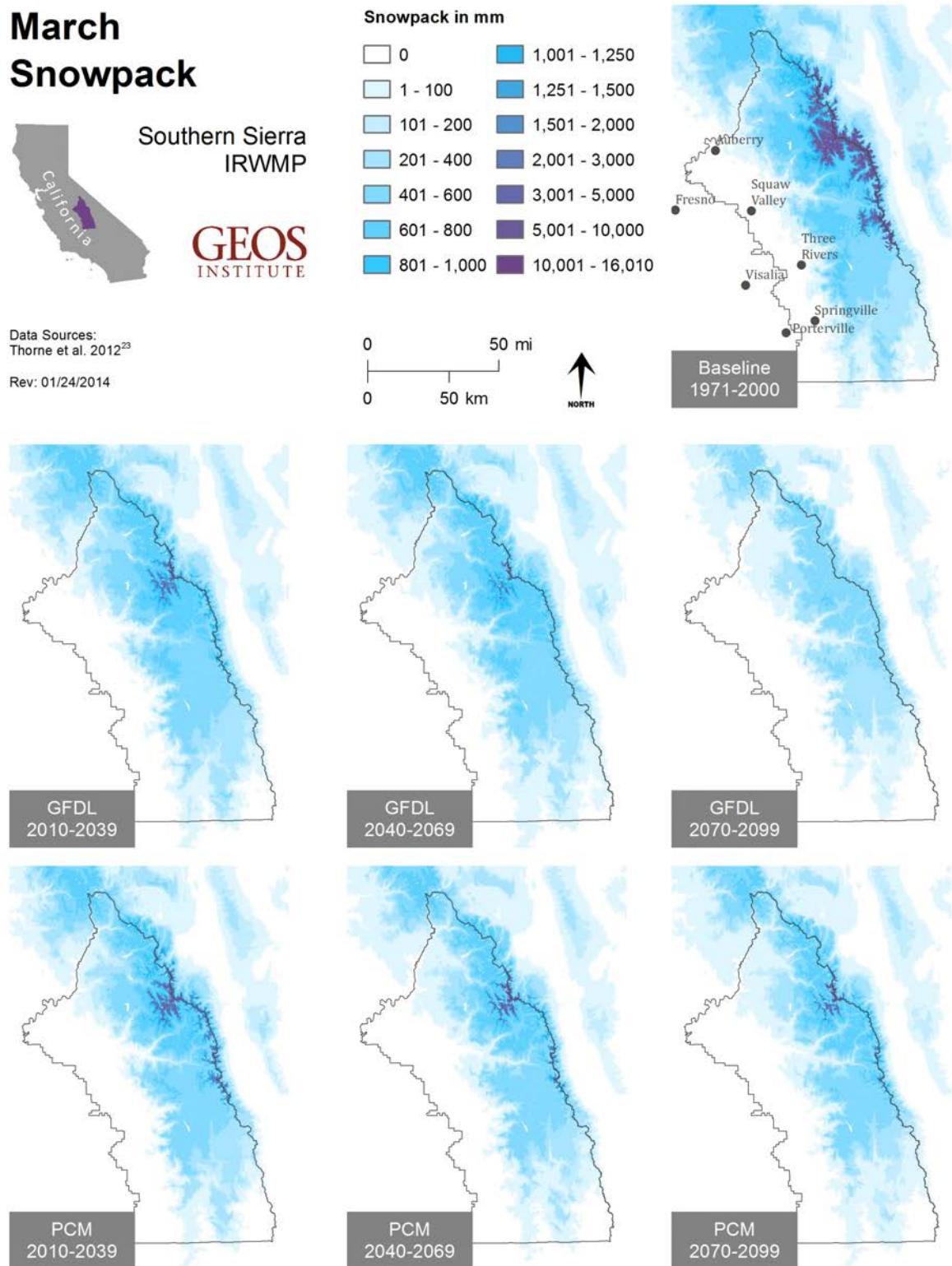


Figure 43. April snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

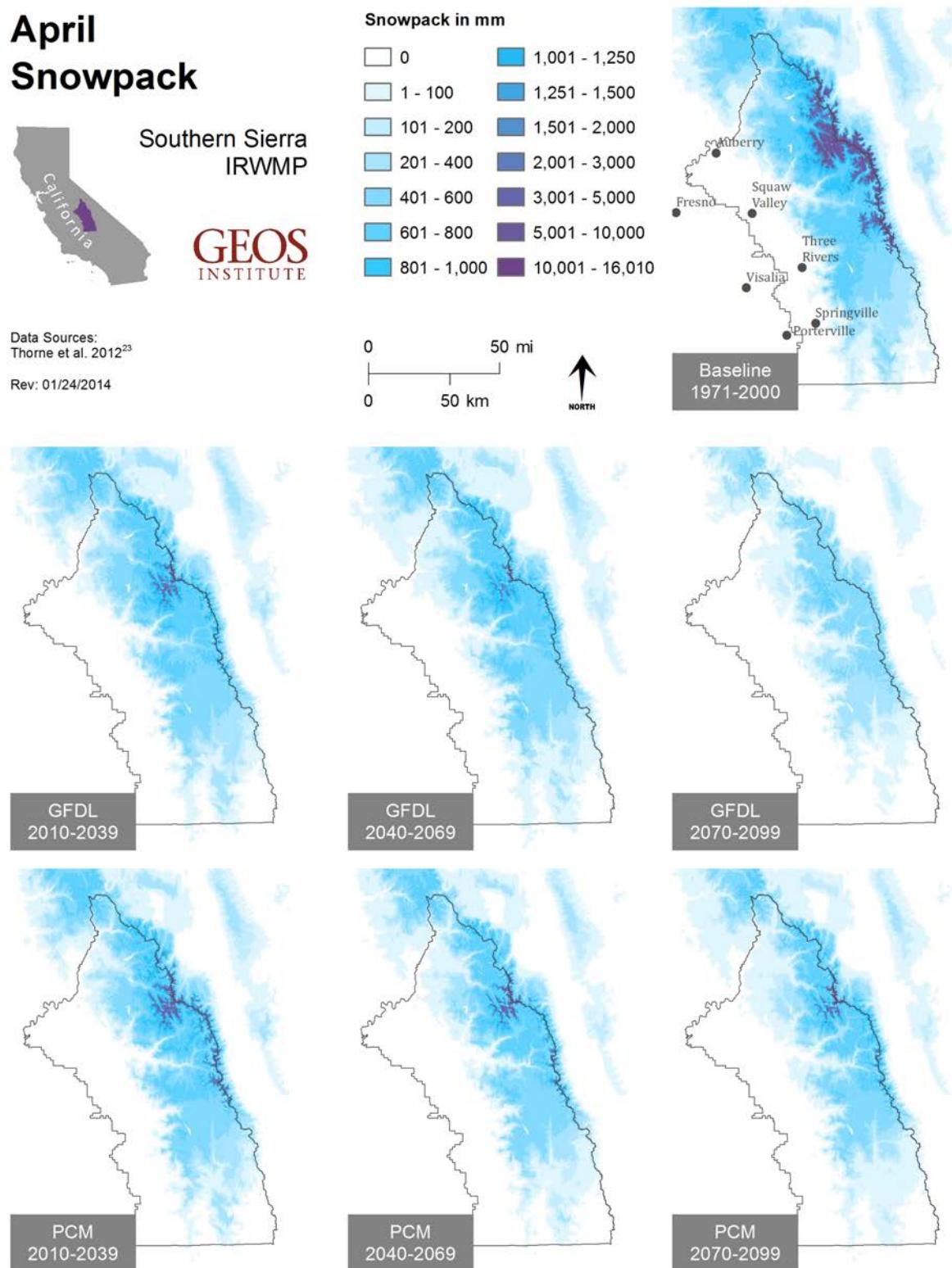


Figure 44. May snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

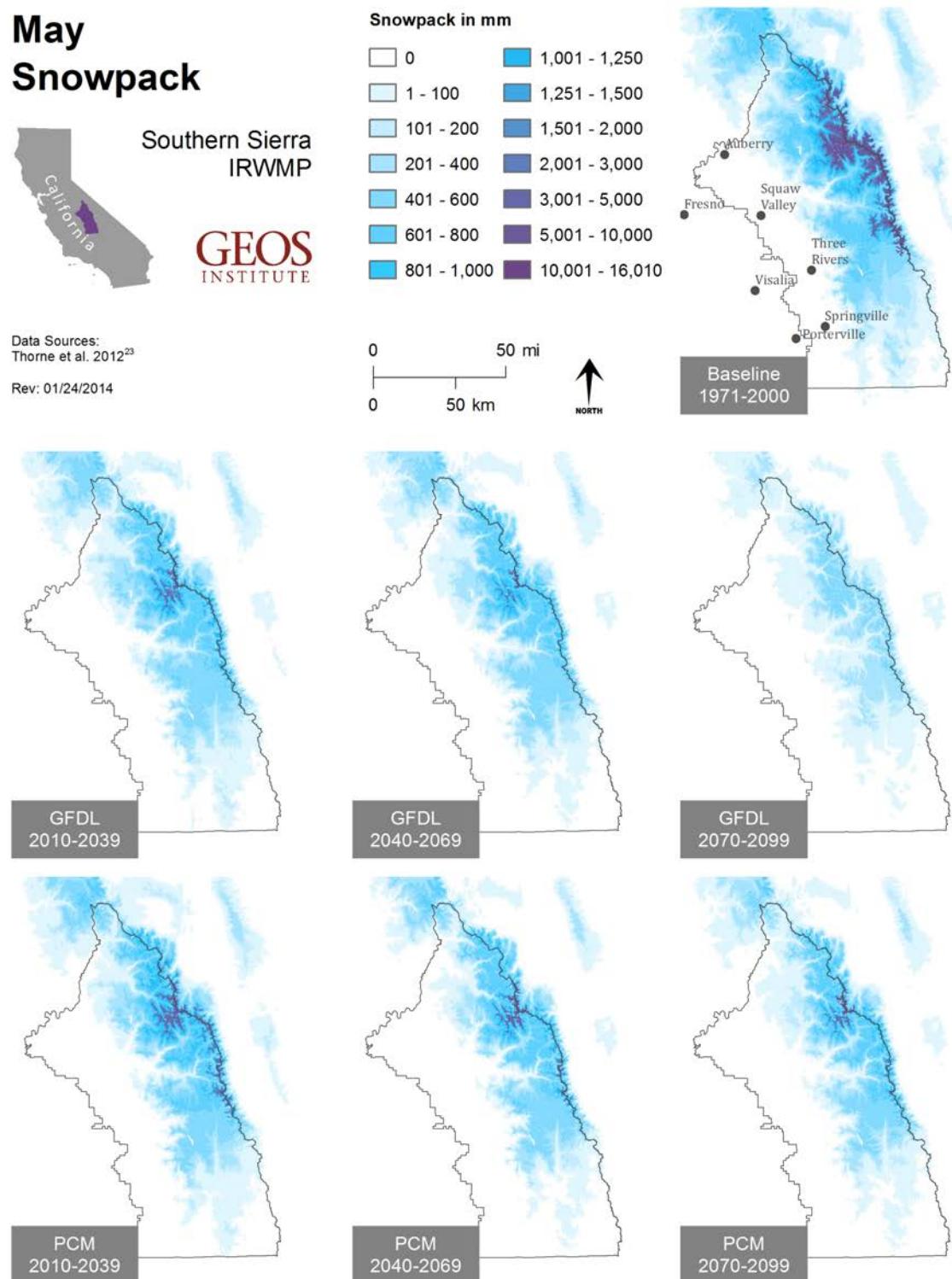


Figure 45. June snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

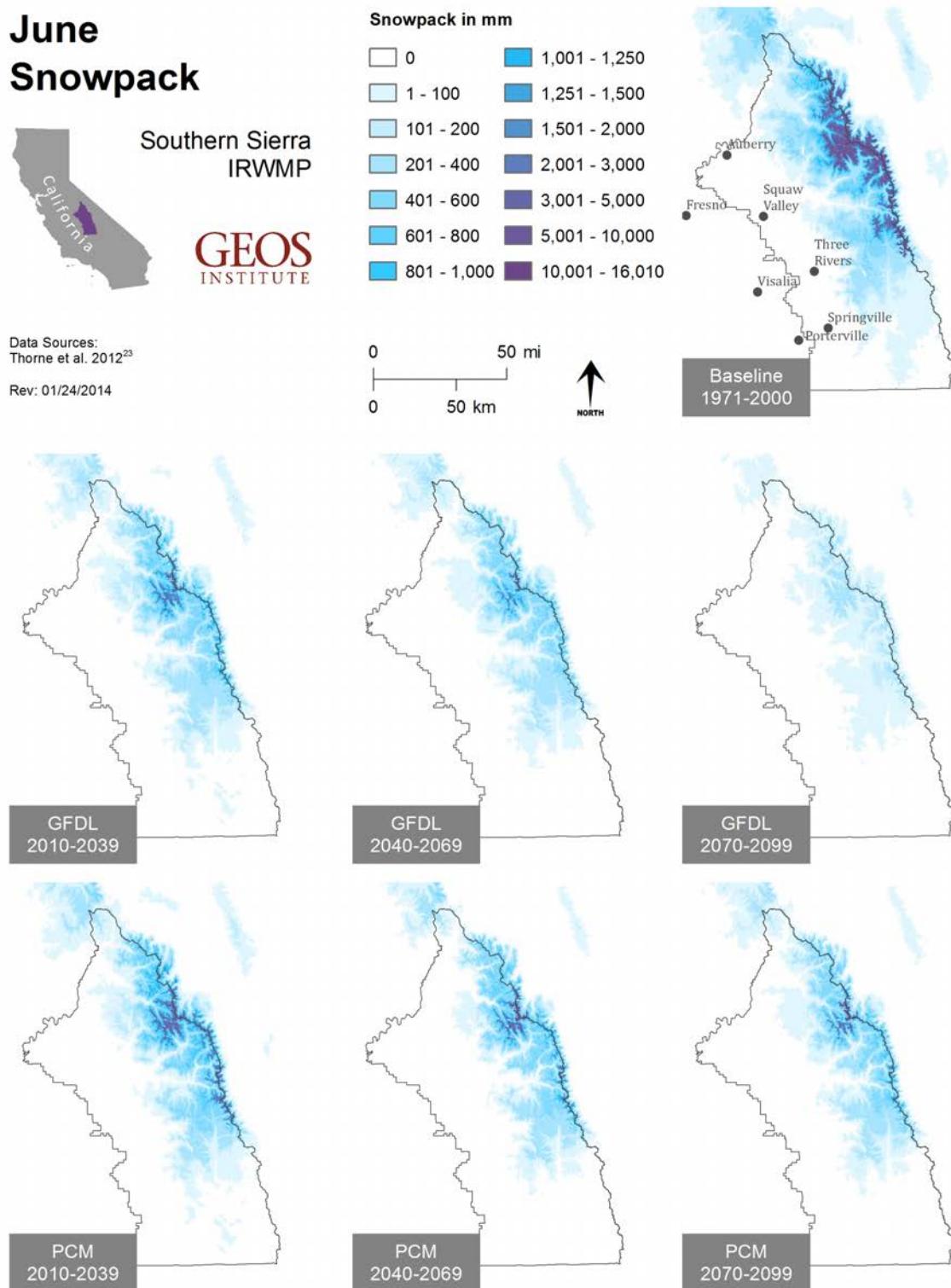


Figure 46. July snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

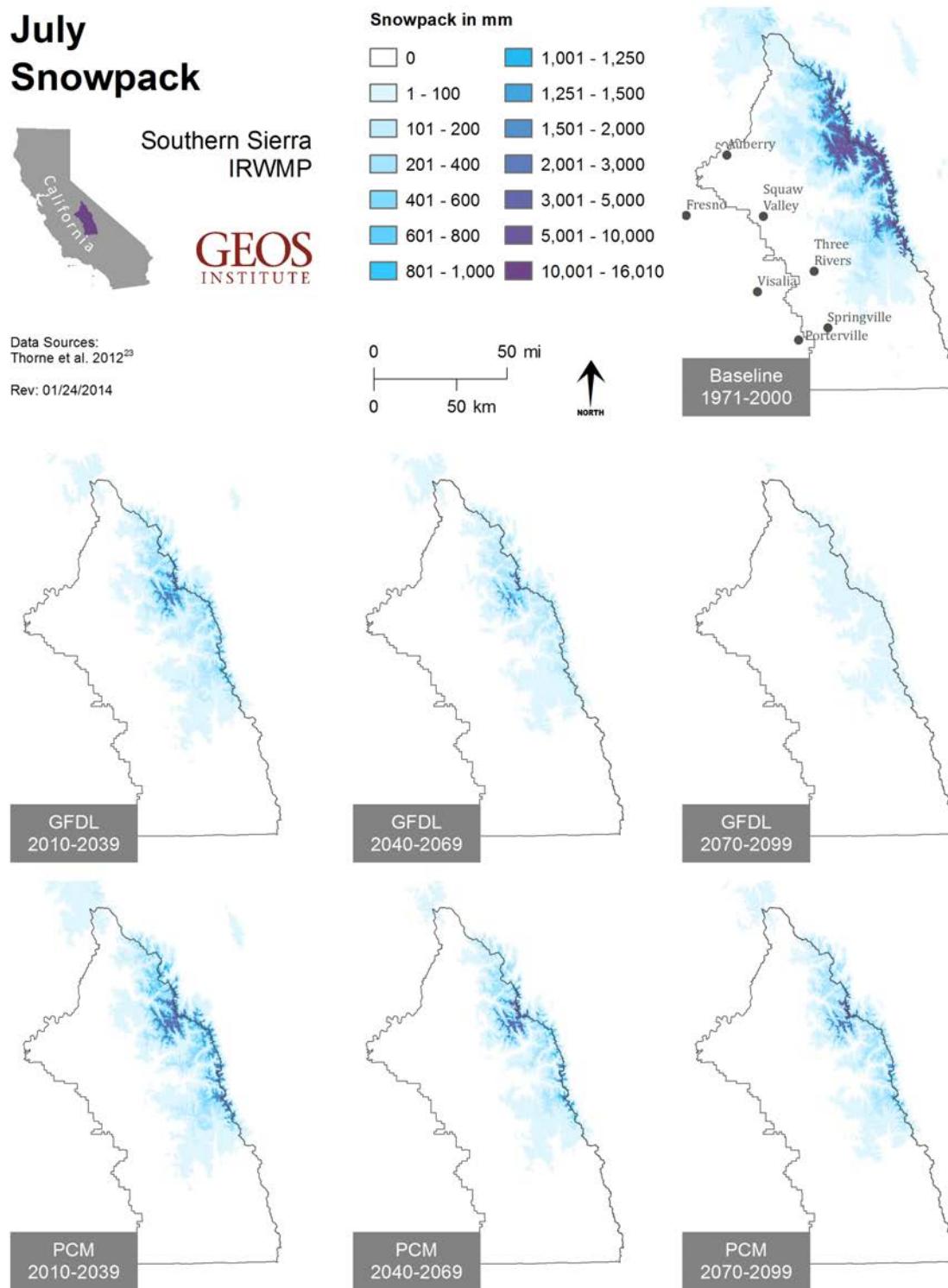


Figure 47. August snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

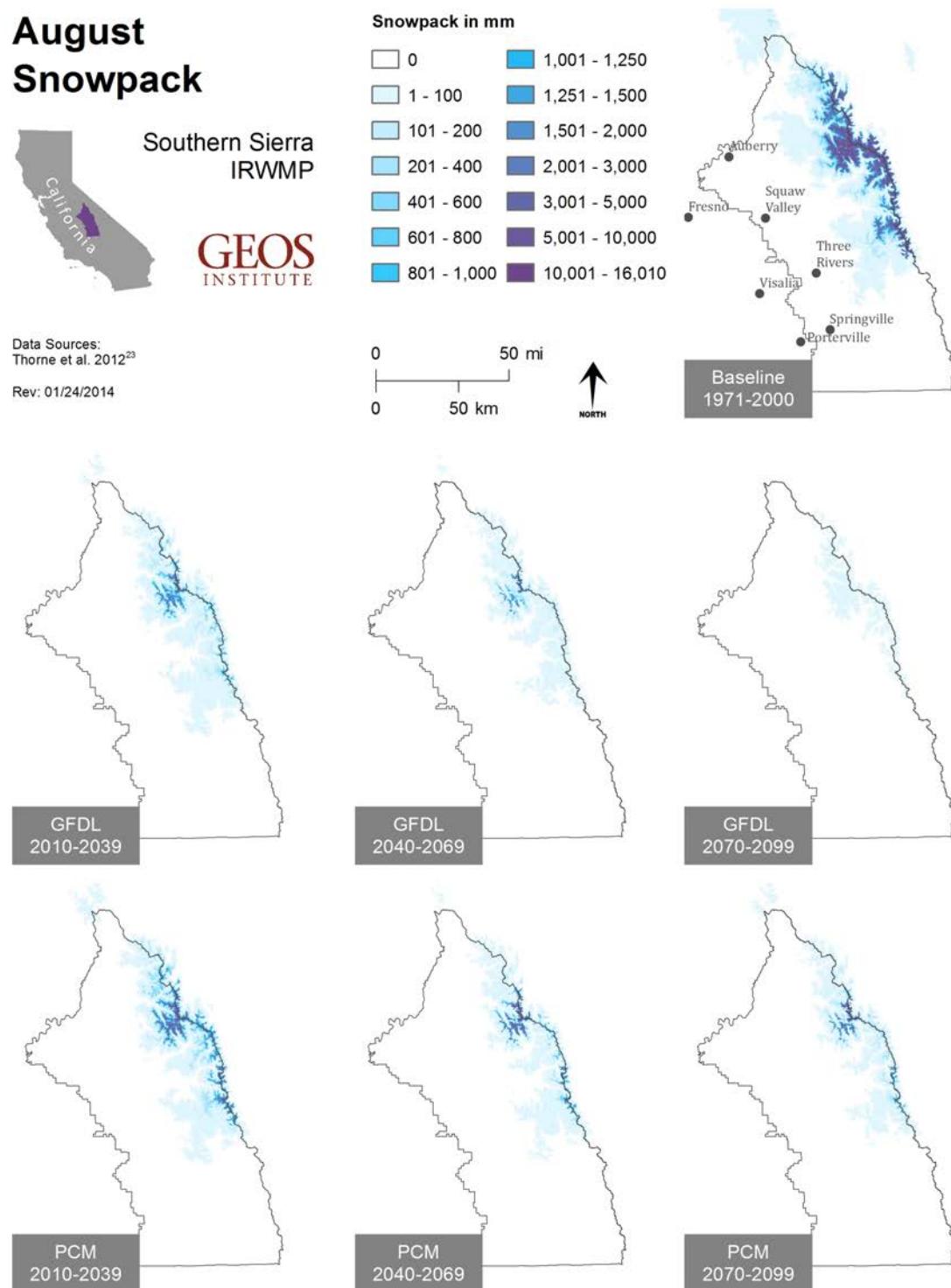


Figure 48. September snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

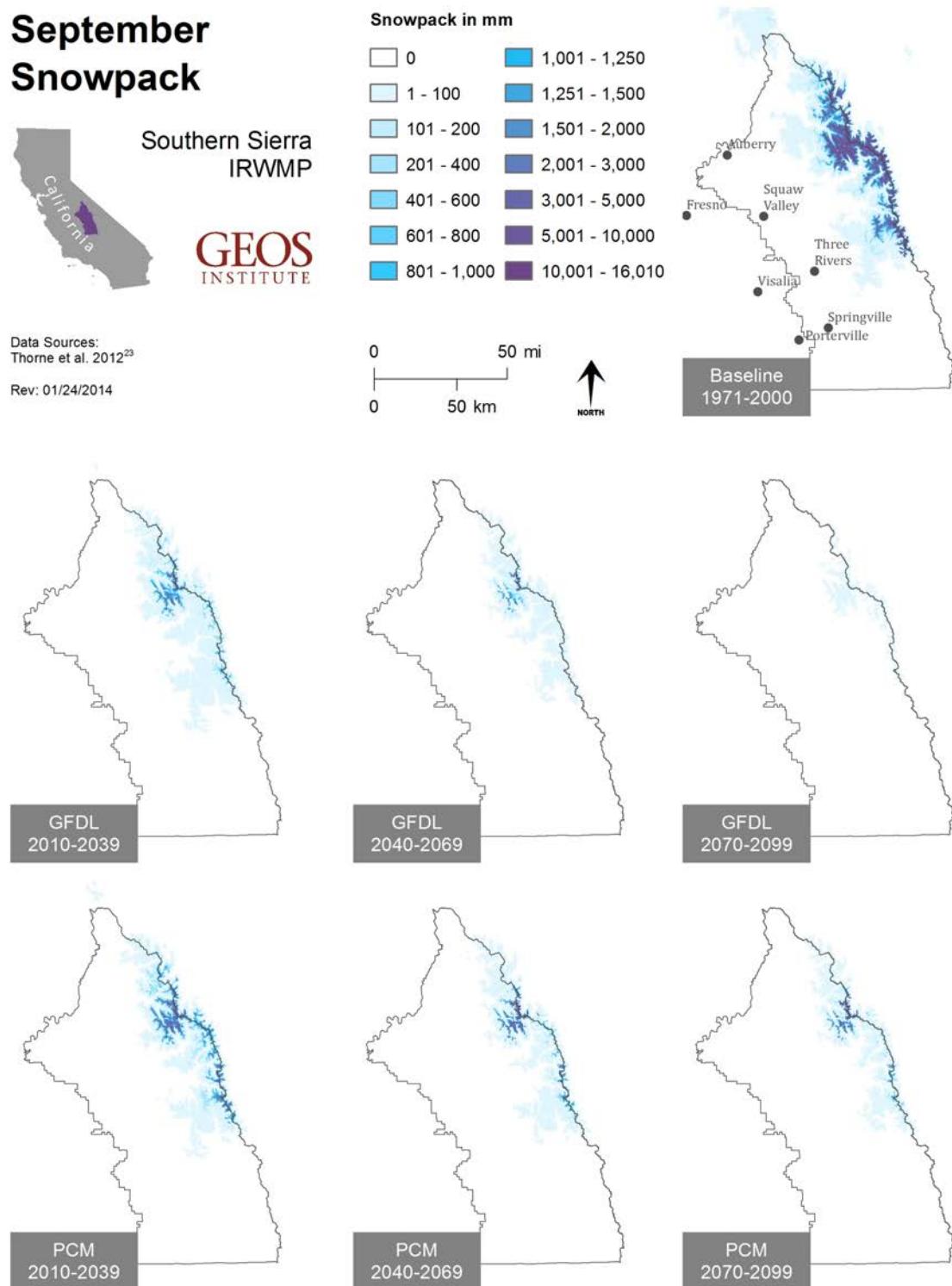


Figure 49. October snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

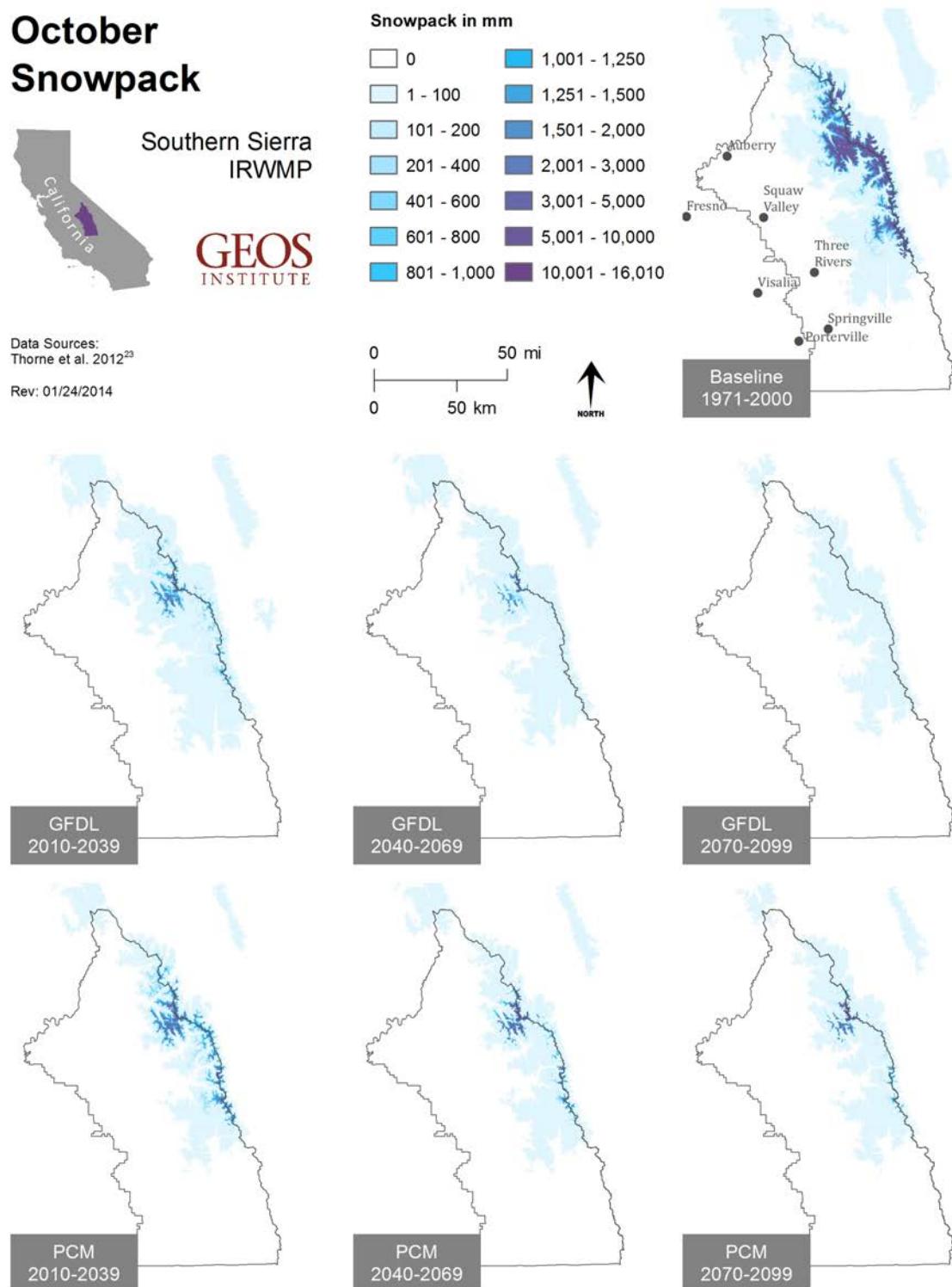


Figure 50. November snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

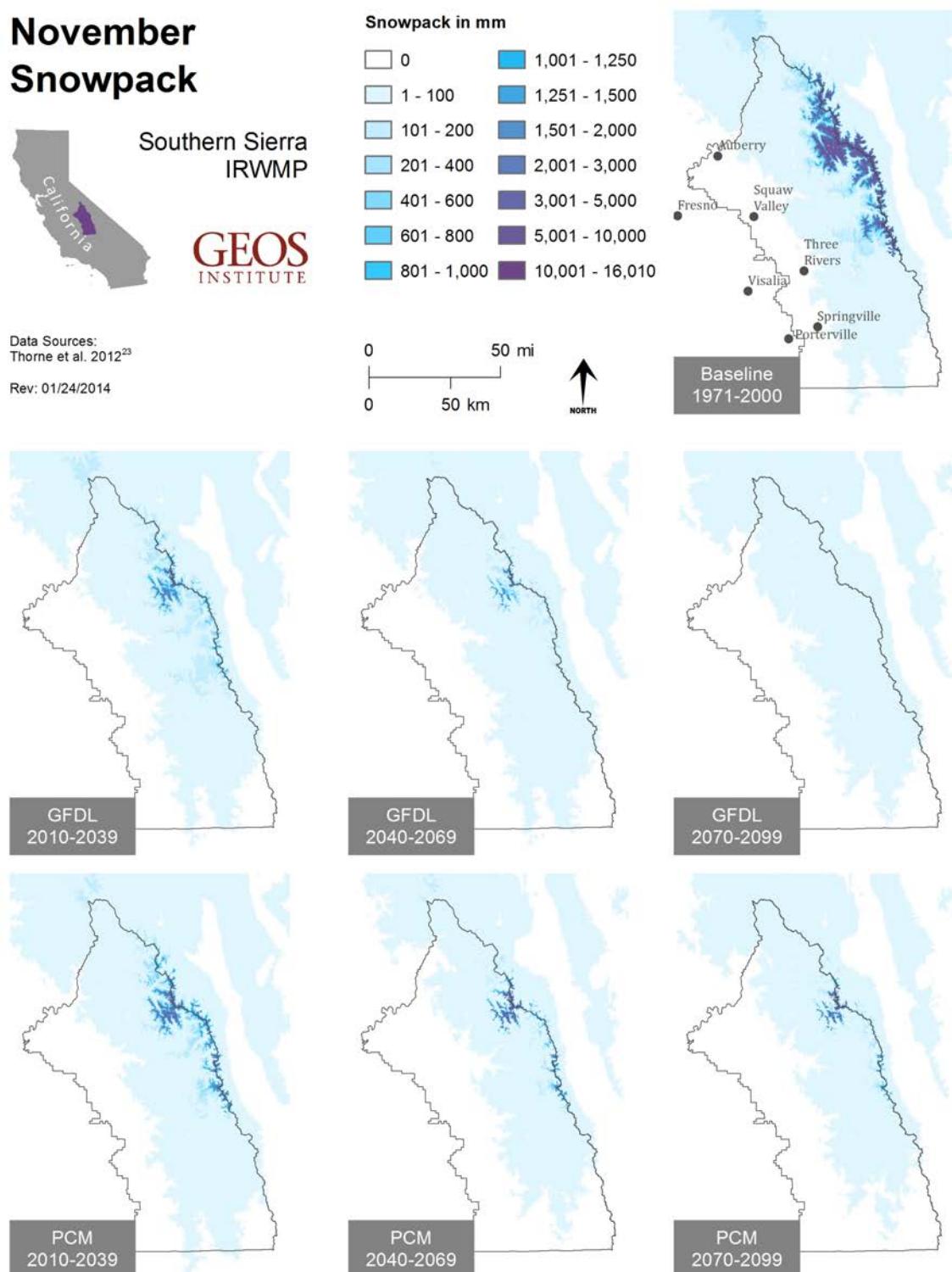


Figure 51. December snowpack across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

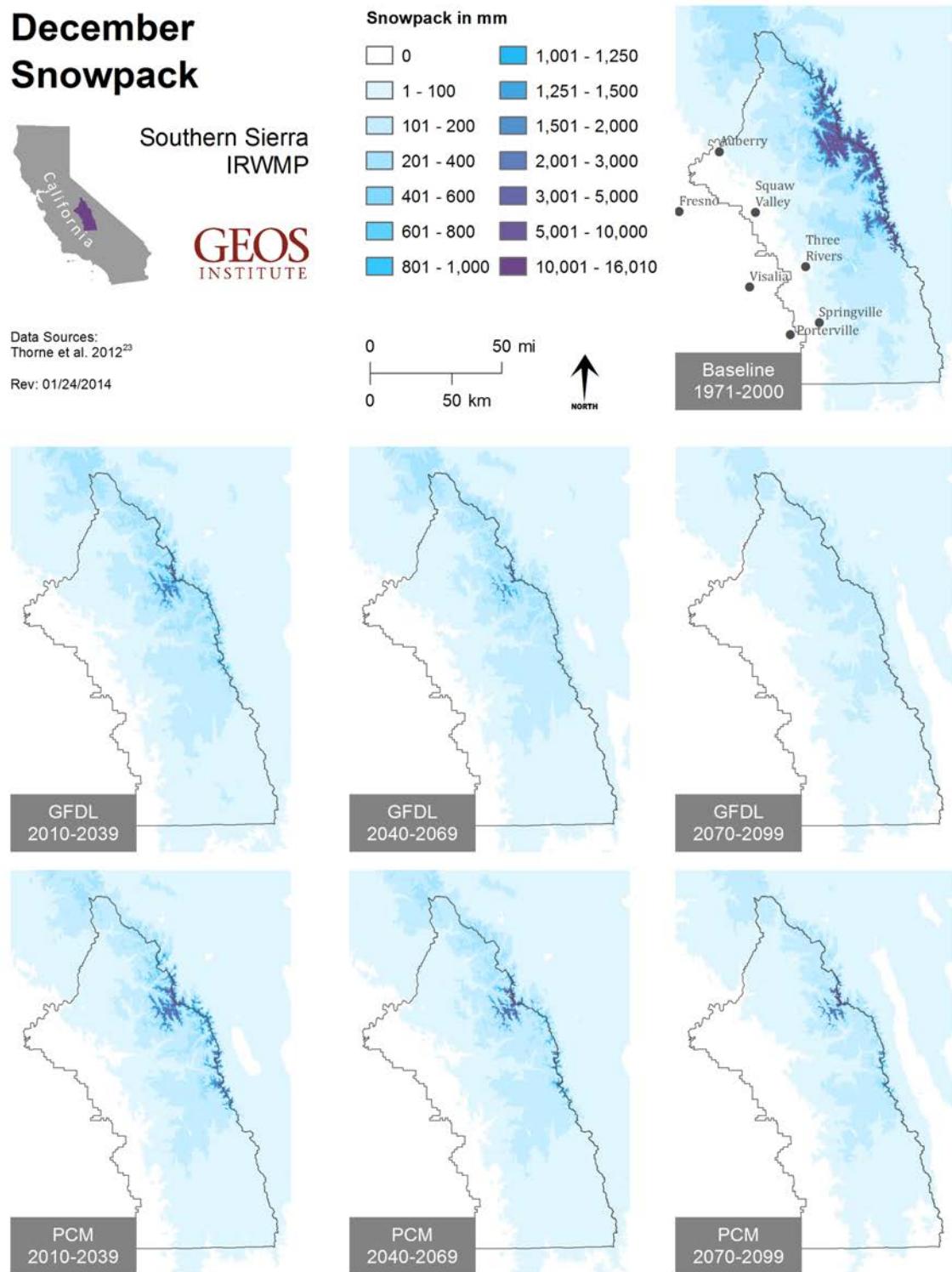


Figure 52. January climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

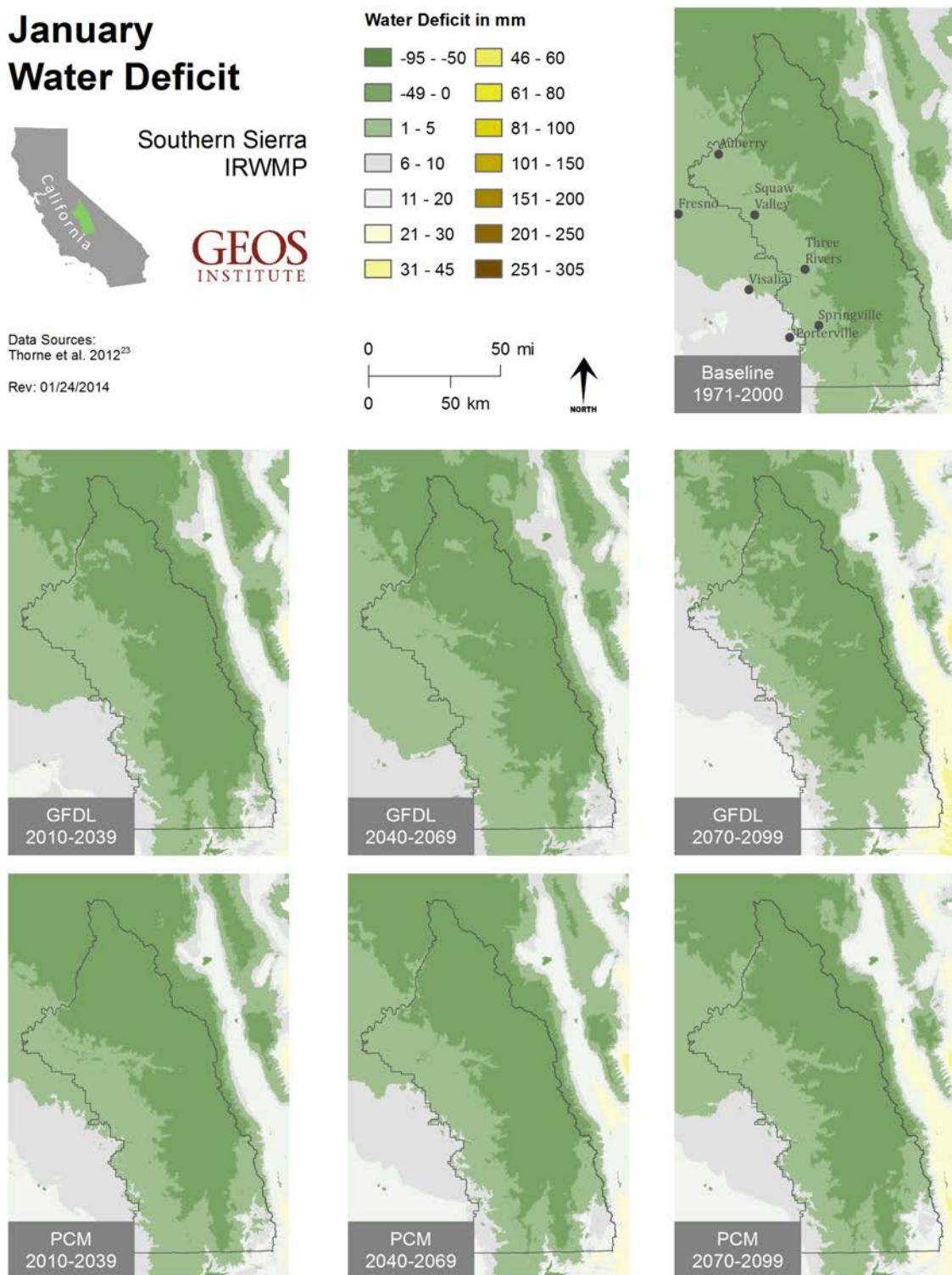


Figure 53. February climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

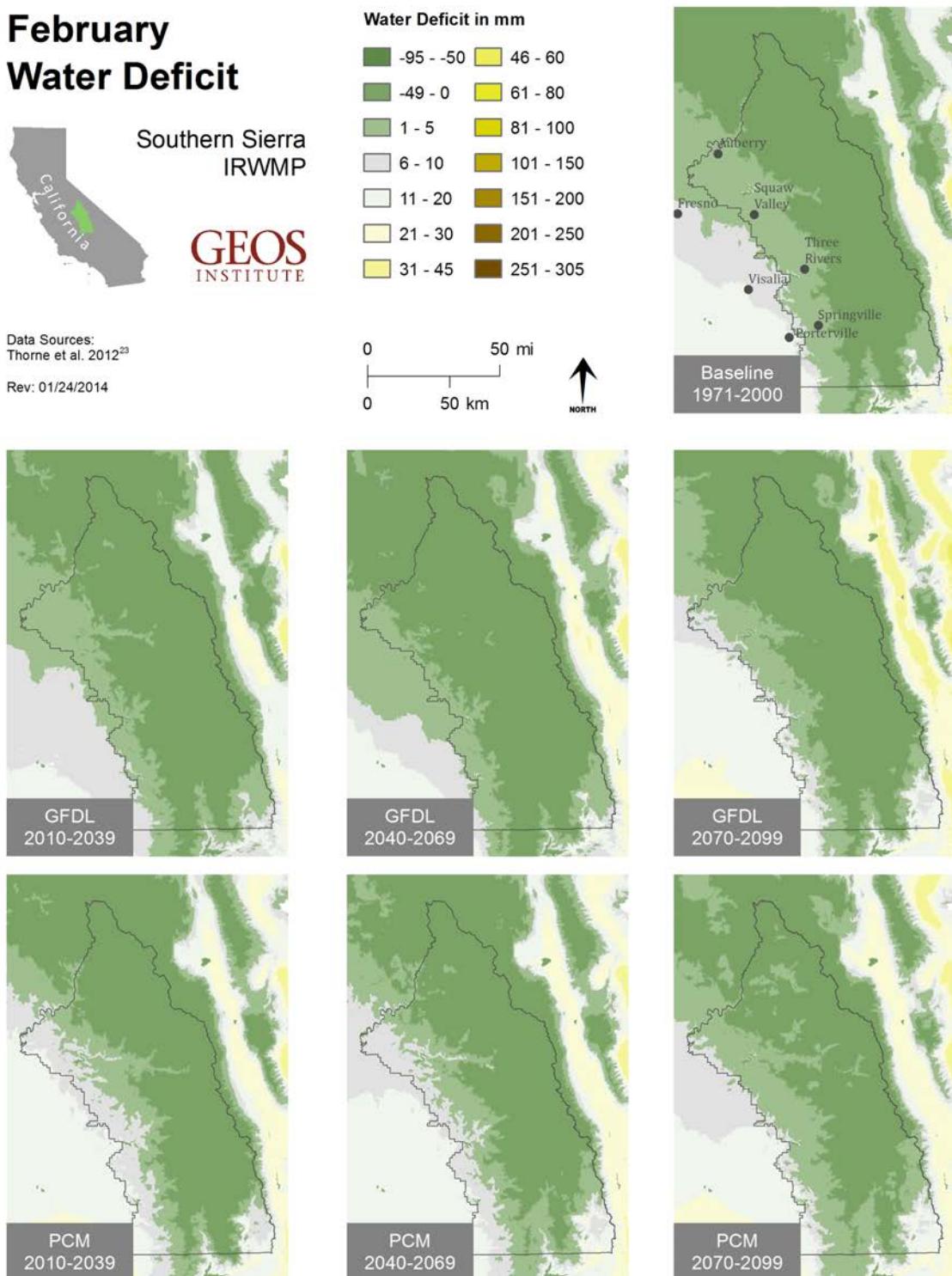


Figure 54. March climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

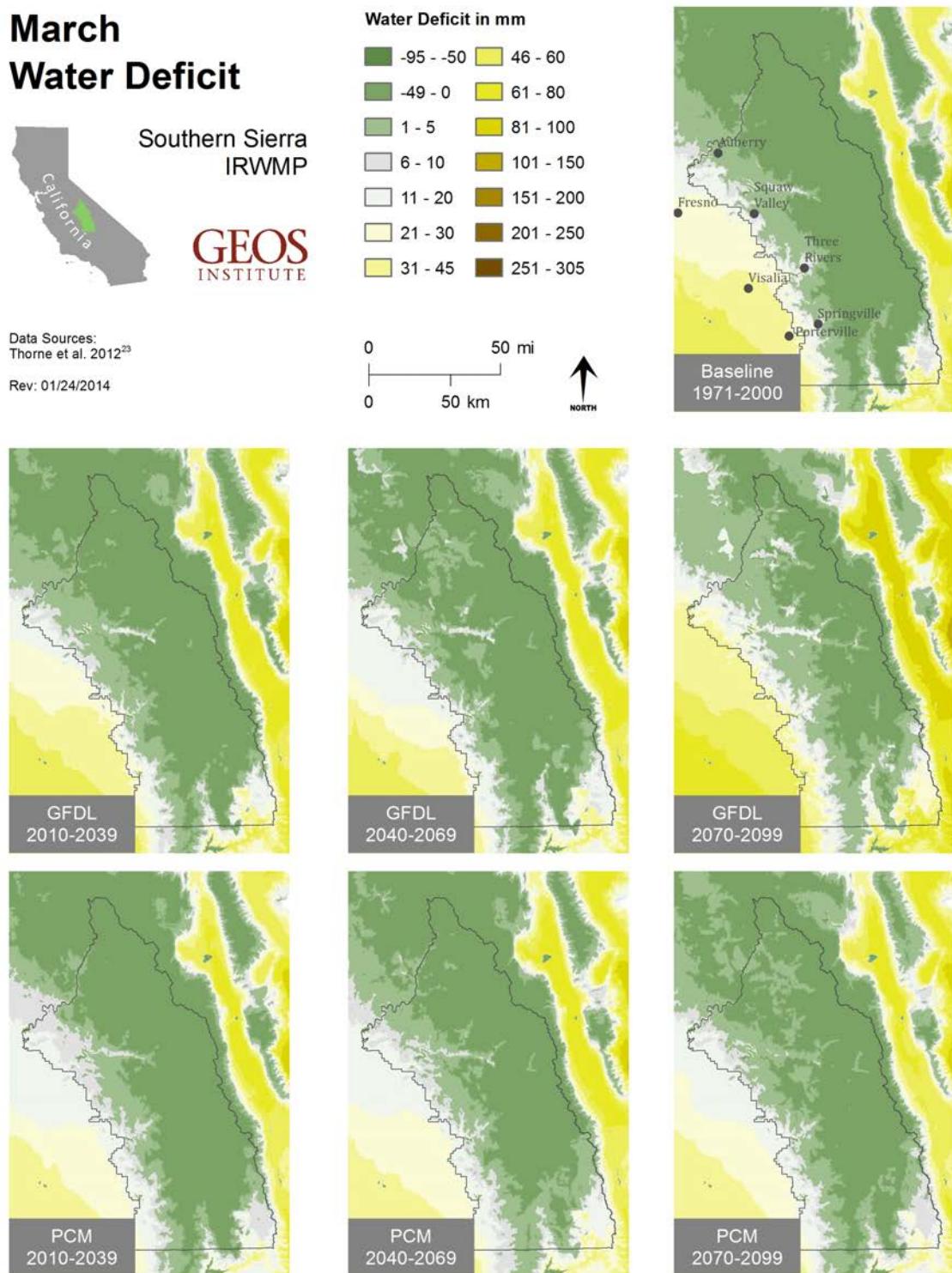


Figure 55. April climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

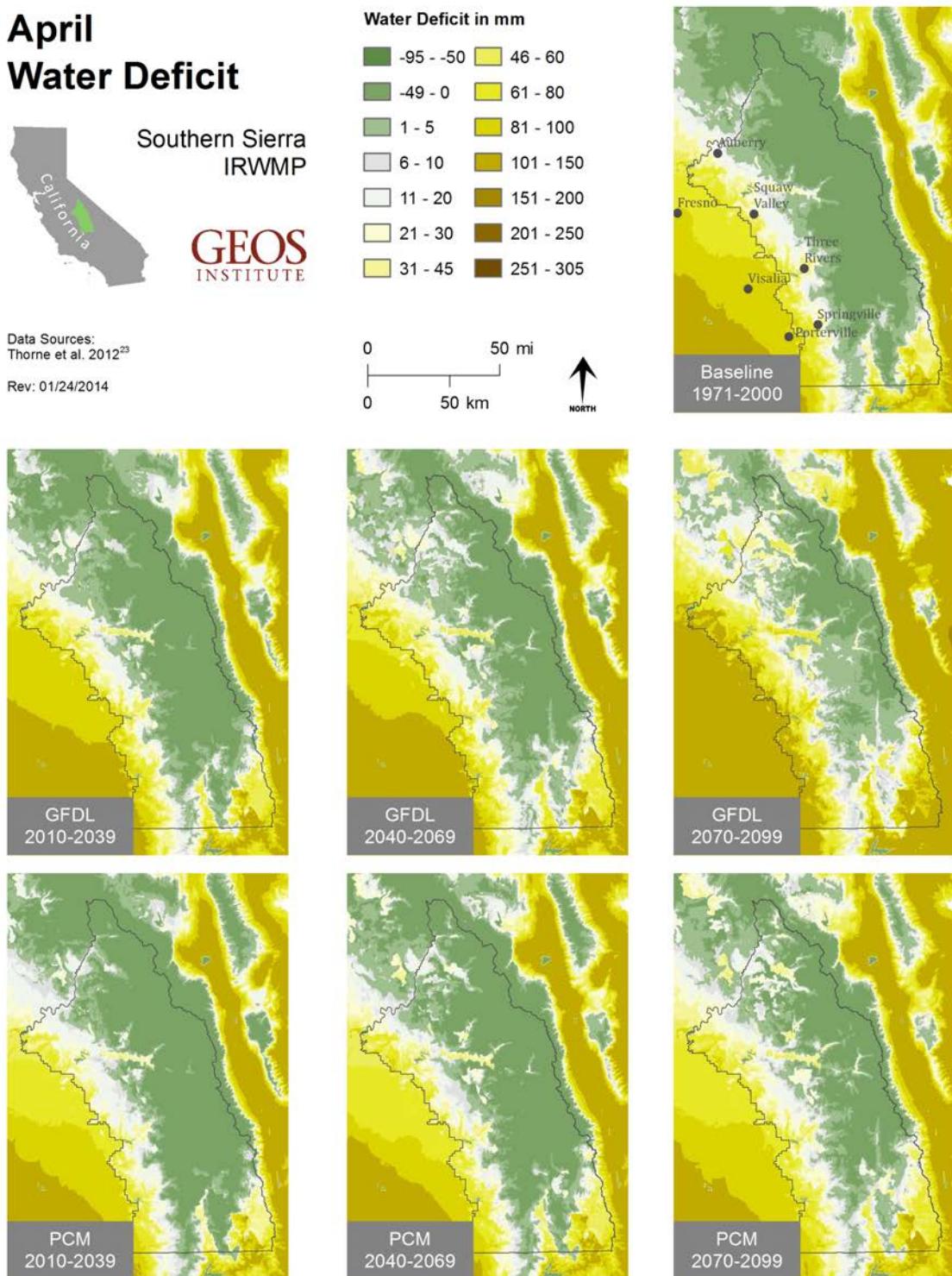


Figure 56. May climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

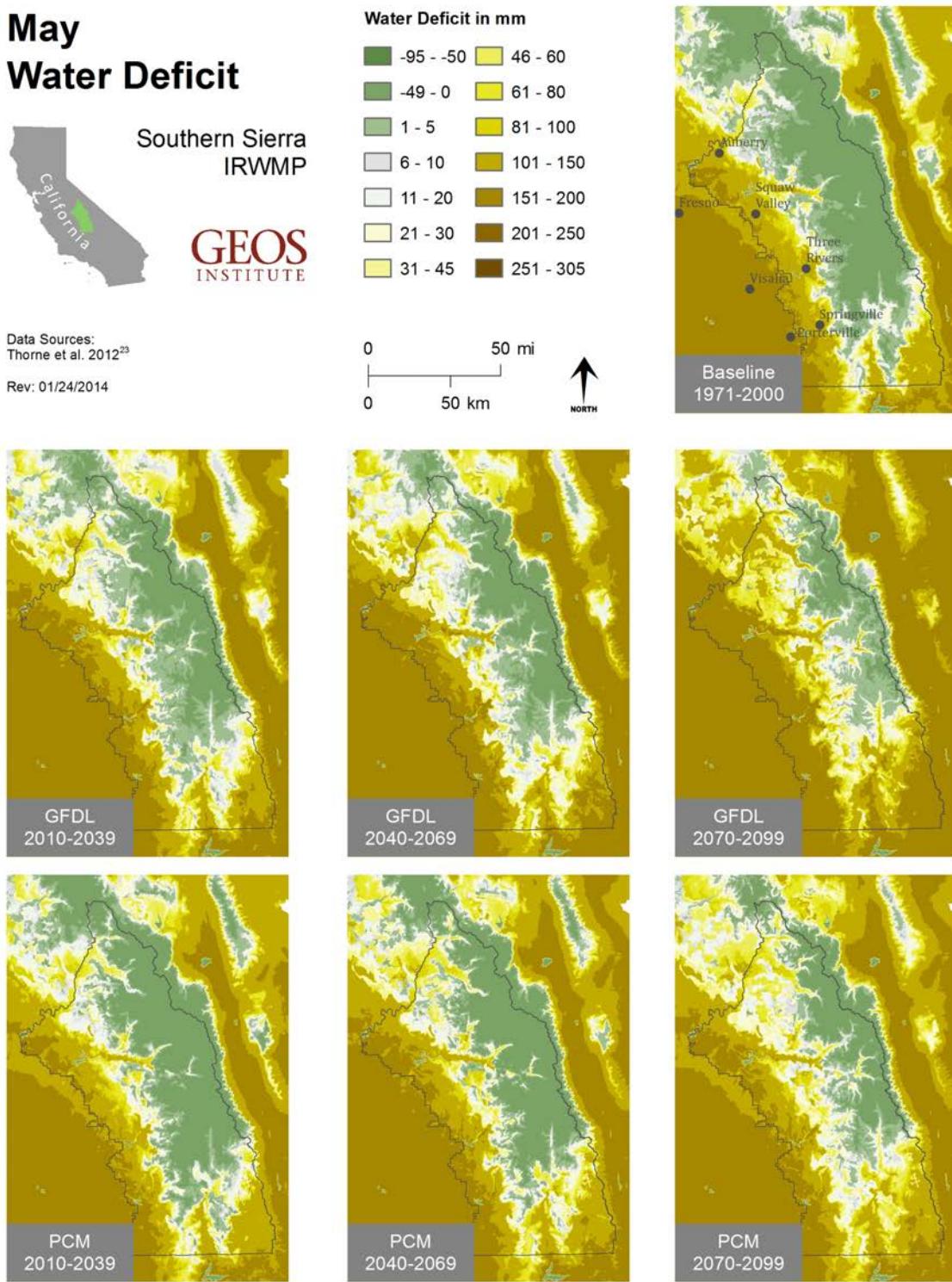


Figure 57. June climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

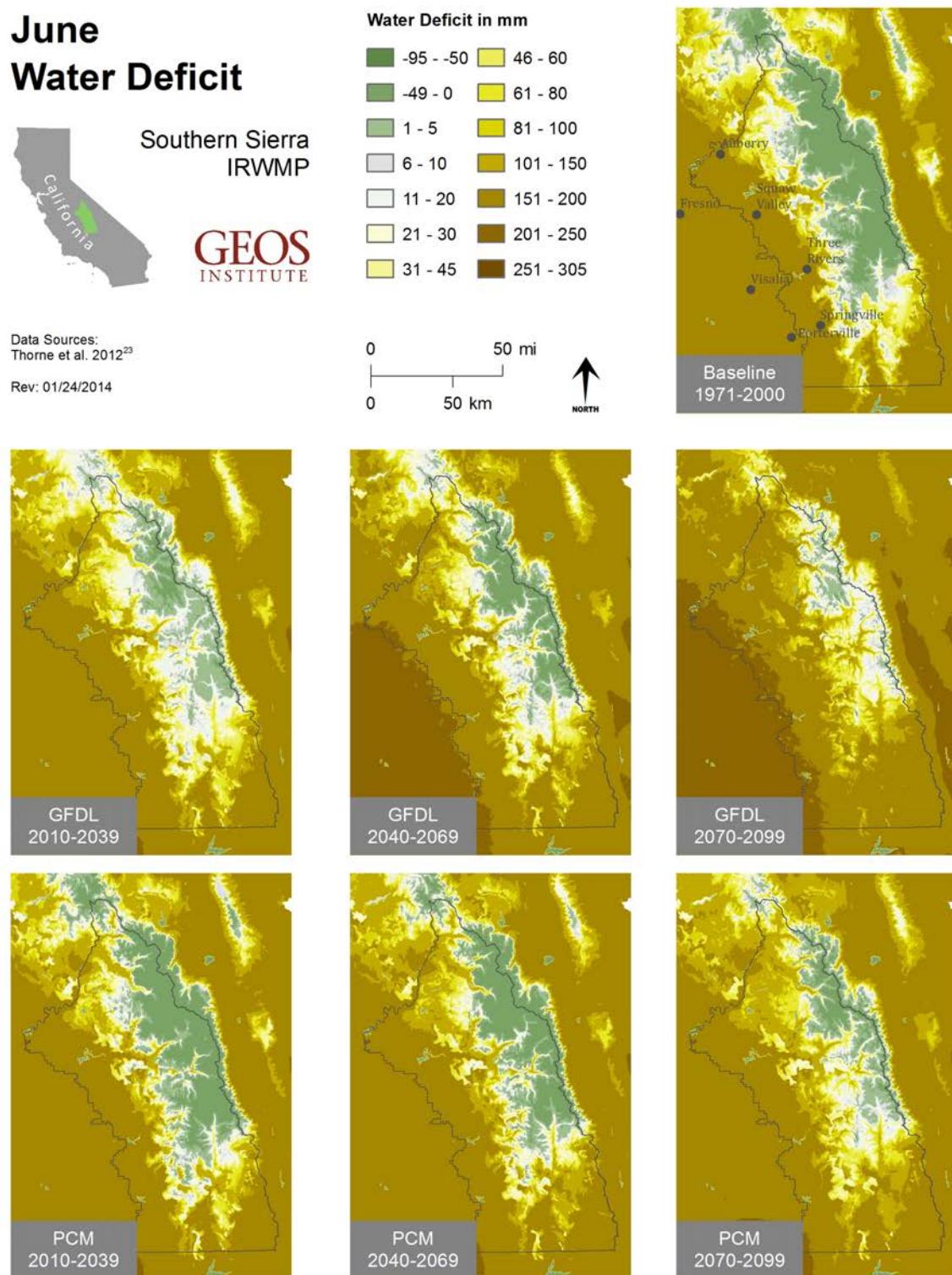


Figure 58. July climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

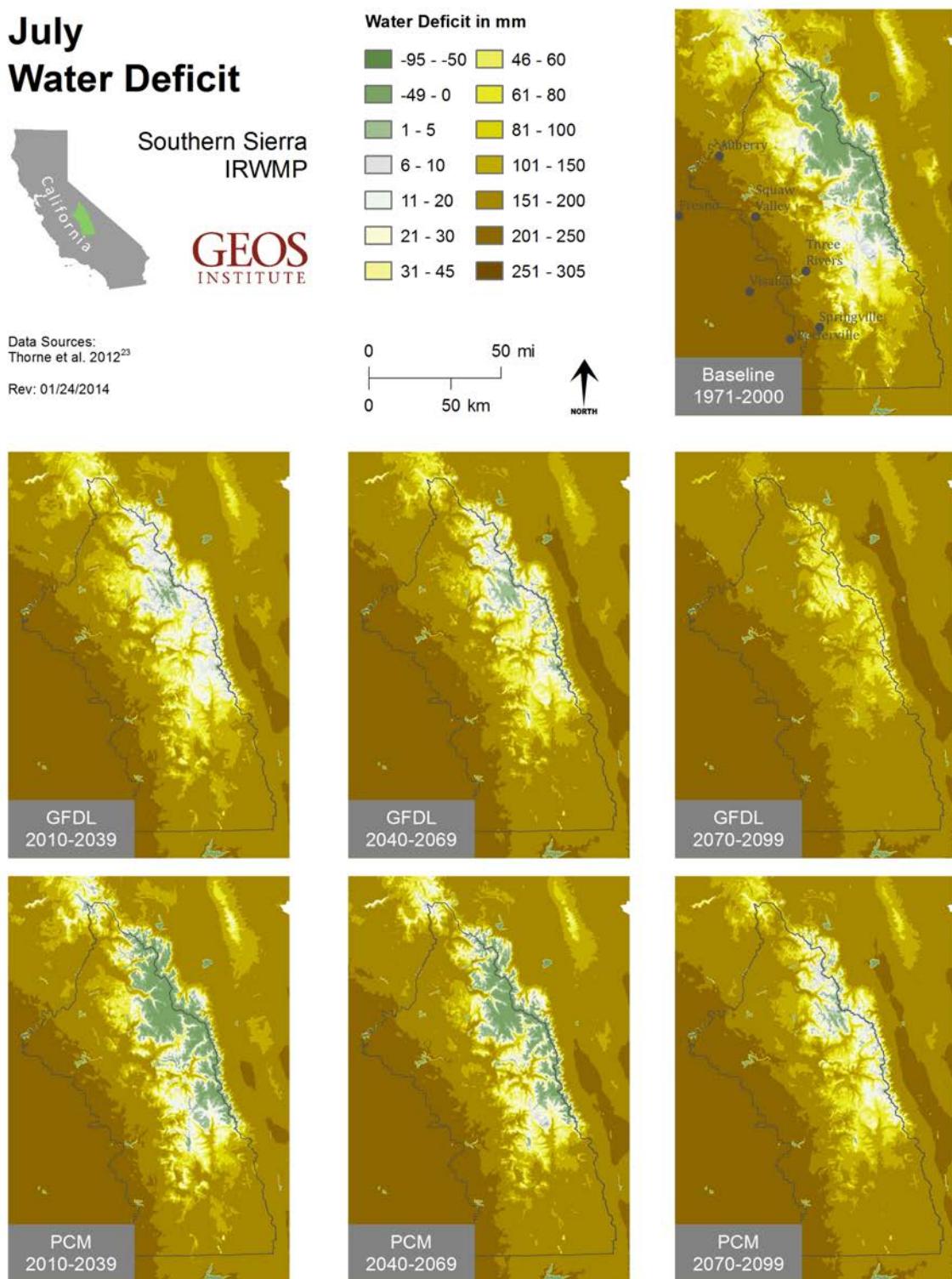


Figure 59. August climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

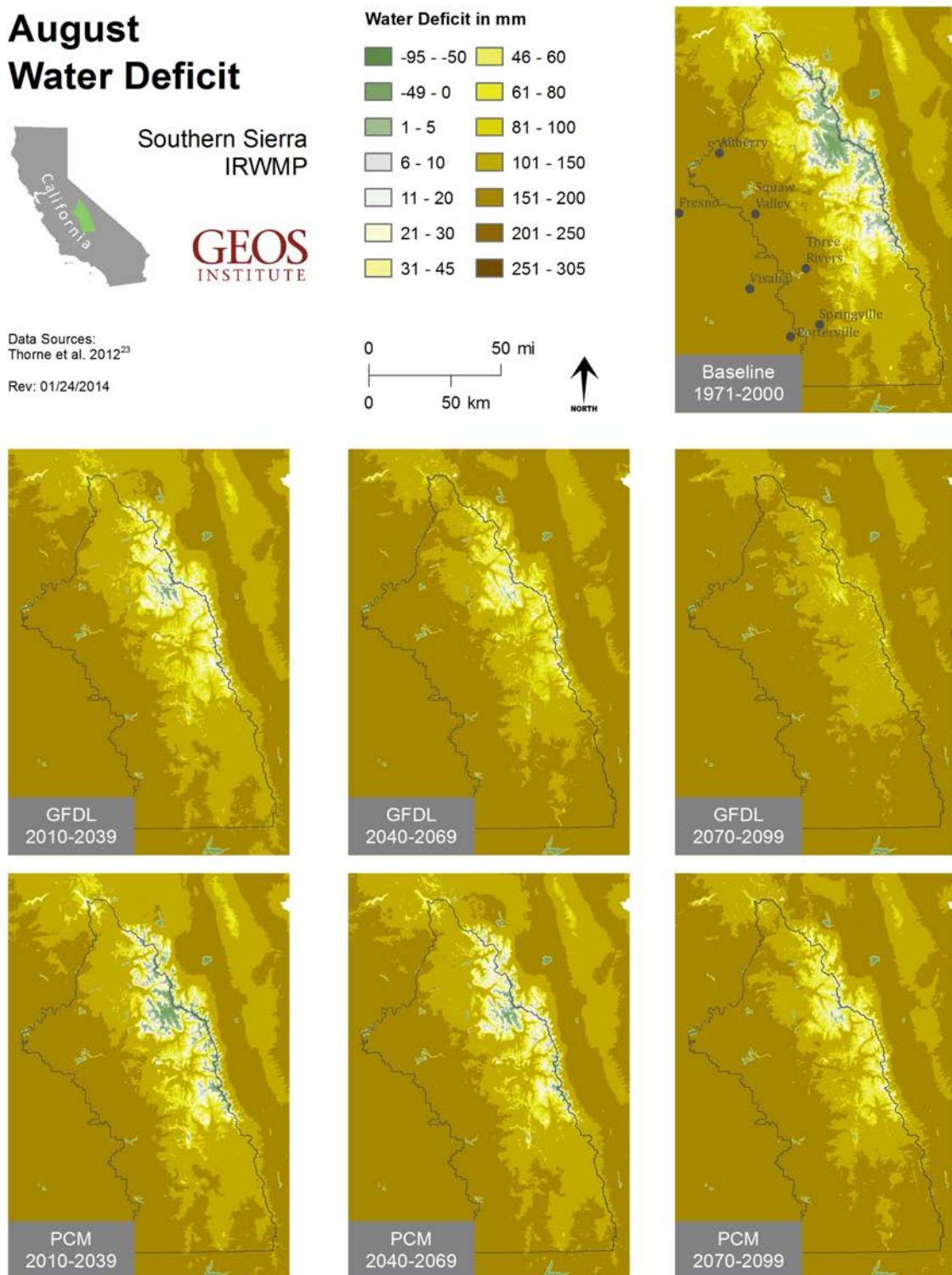


Figure 60. September climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

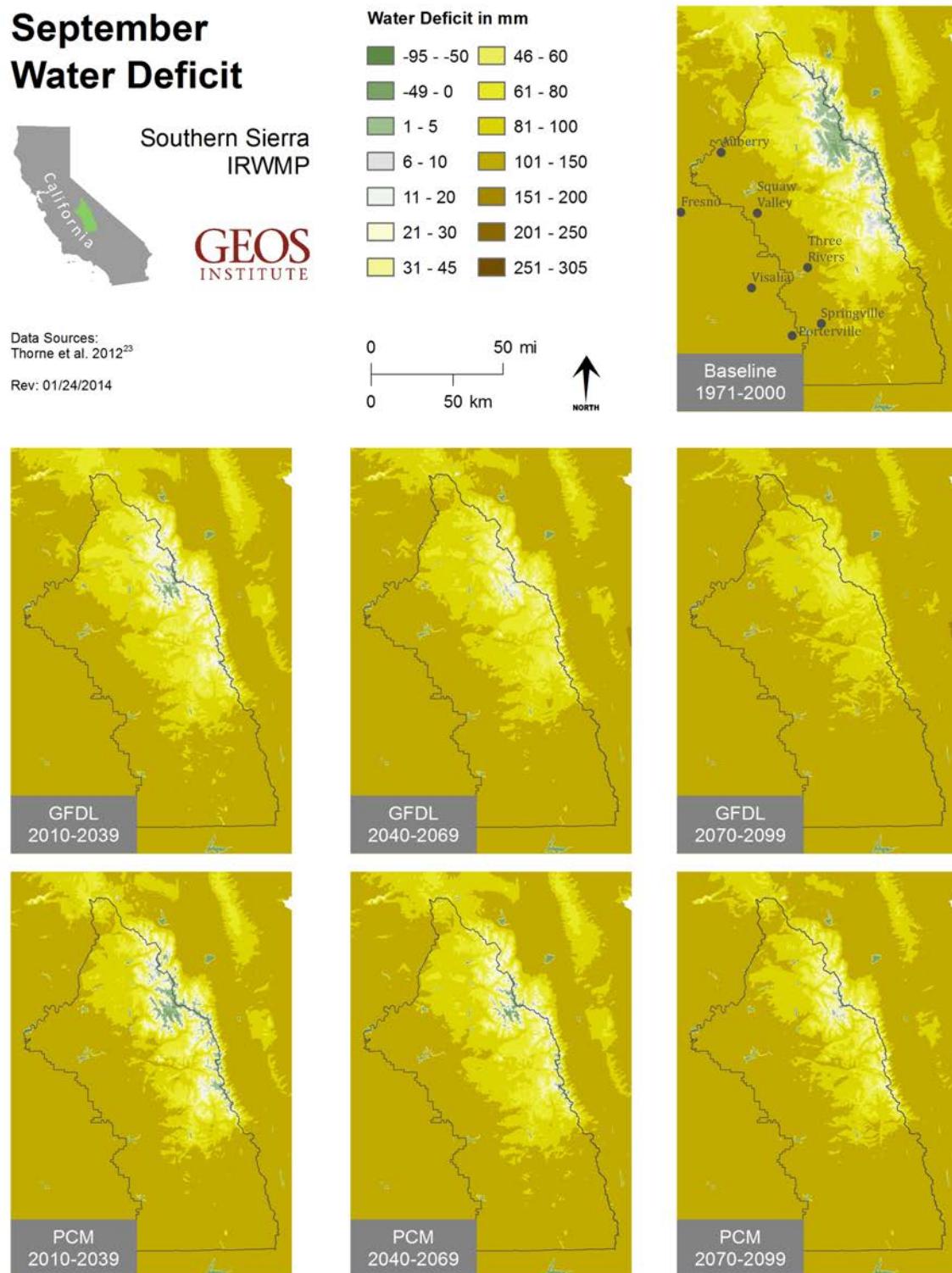


Figure 61. October climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

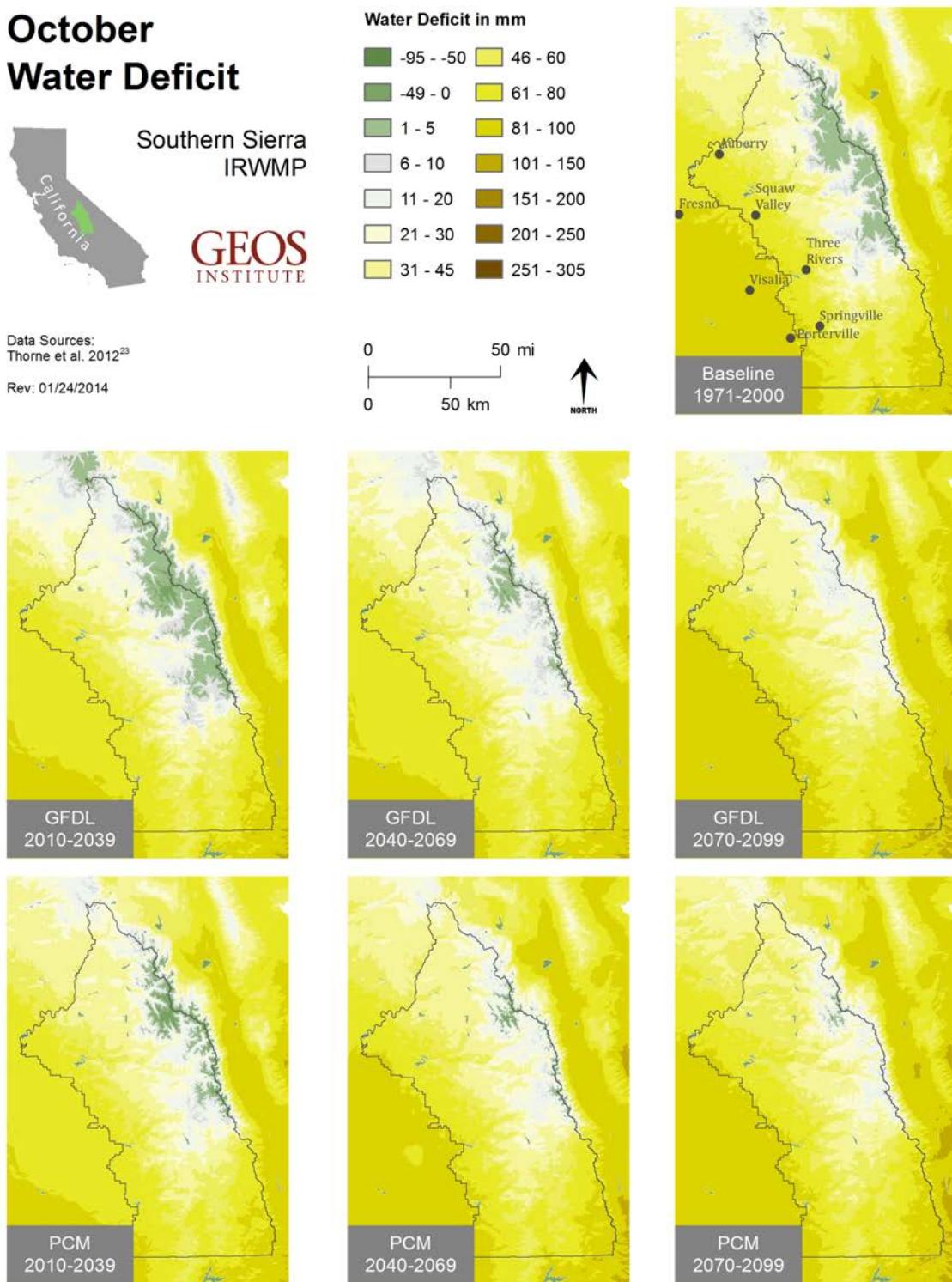


Figure 62. November climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

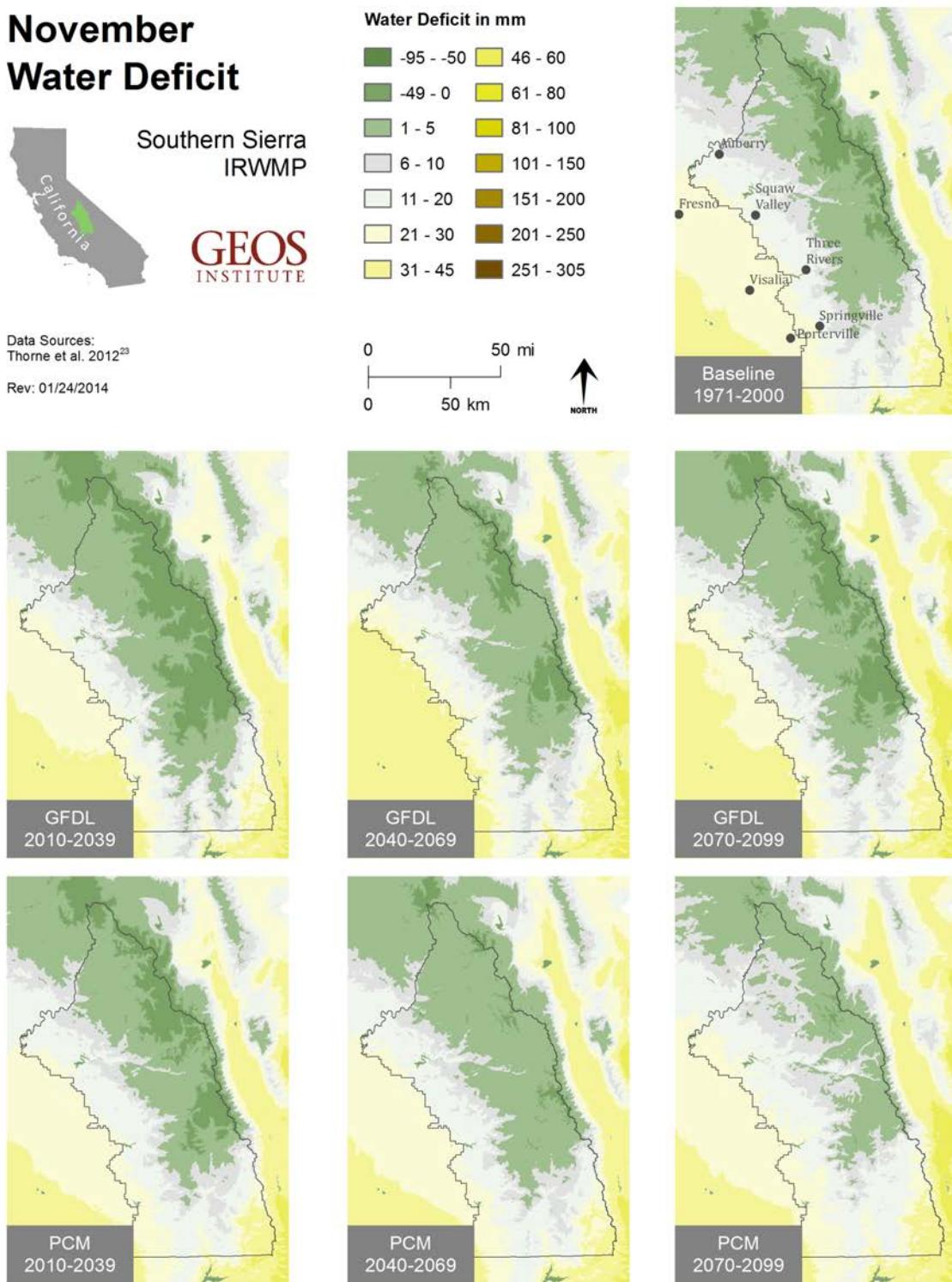


Figure 63. December climate water deficit across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM) and the A2 emissions scenario.

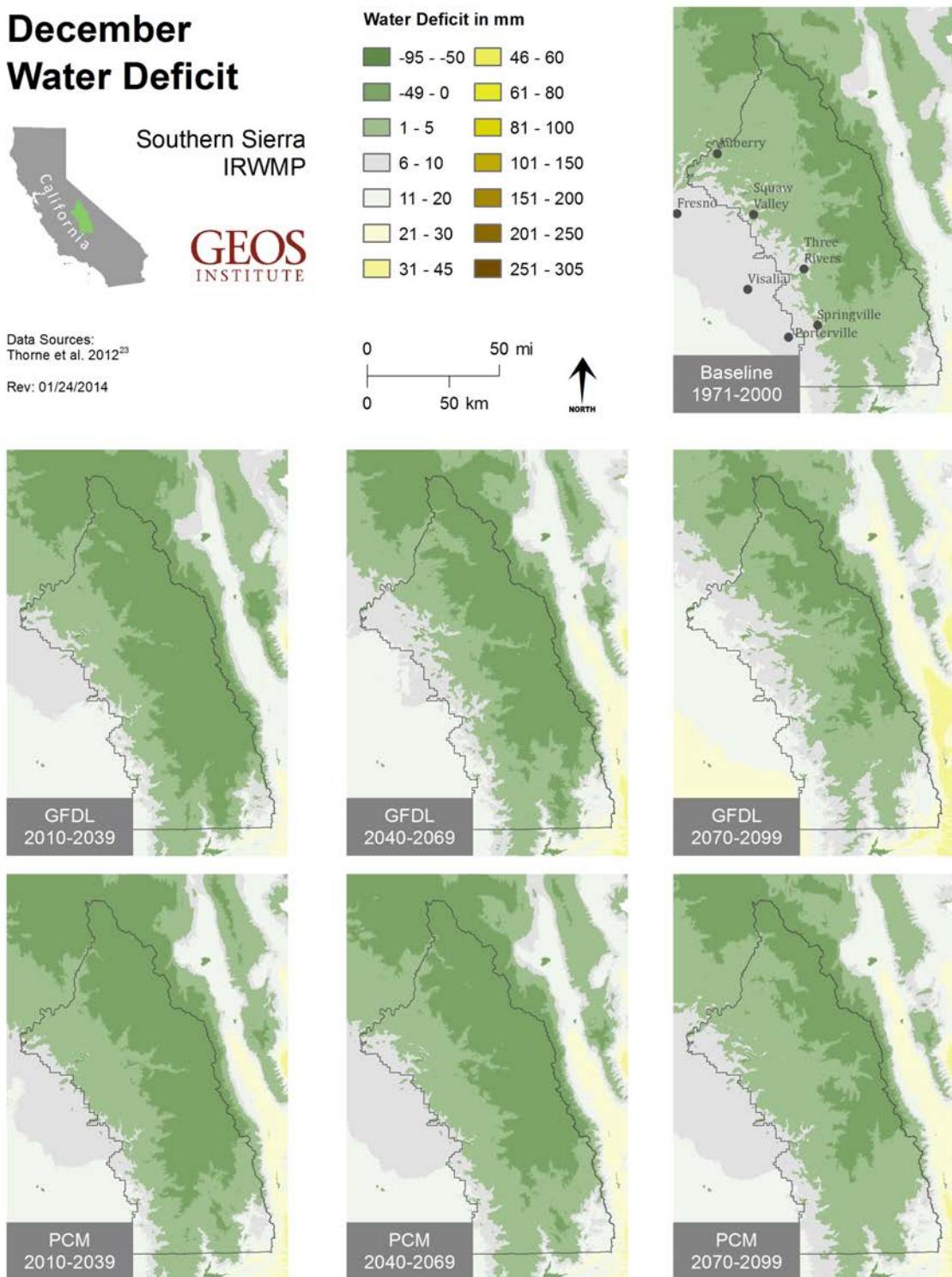


Figure 64. Modeled current and future vegetation type across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM), the A2 emissions scenario, and the MC1 dynamic vegetation model. Note that the MC1 model does not consider current vegetation or land use change.

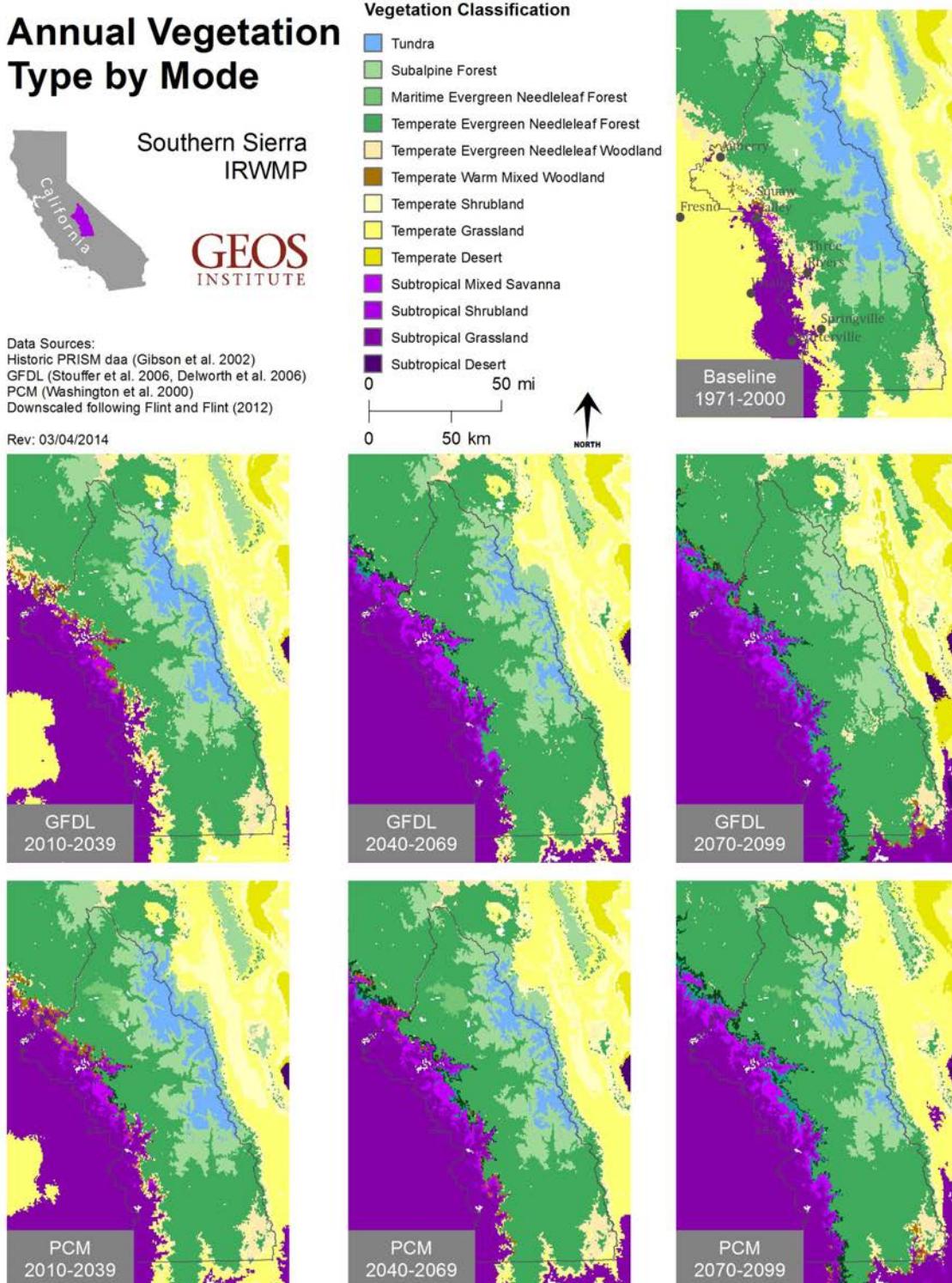


Figure 65. Modeled current and future biomass consumed by fire across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM), the A2 emissions scenario, and the MC1 dynamic vegetation model. Note that the MC1 model does not consider current (actual) vegetation or human influence.

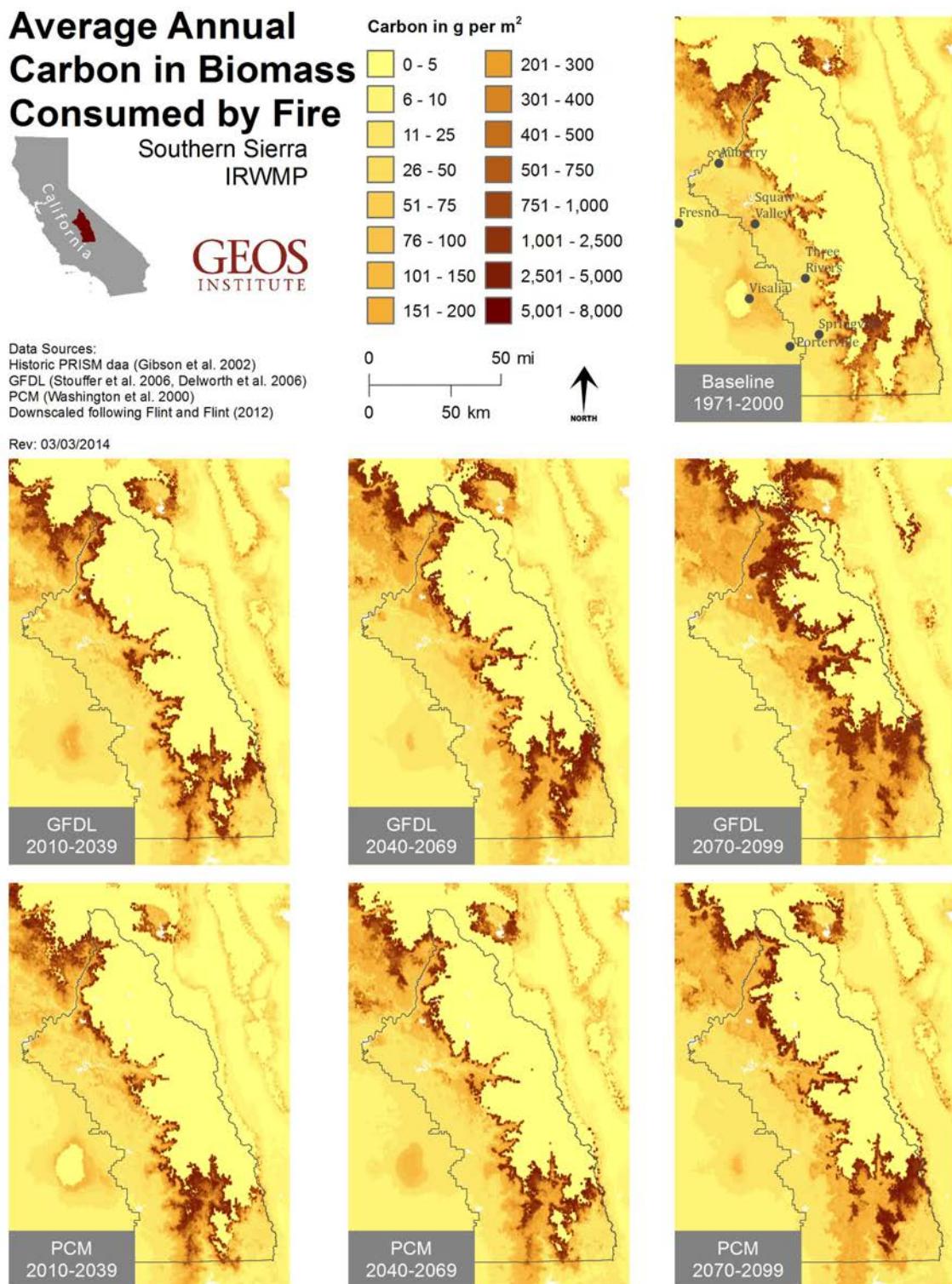


Figure 66. Modeled current and future proportion burned across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM), the A2 emissions scenario, and the MC1 dynamic vegetation model. Note that the MC1 model does not consider current (actual) vegetation or human influence.

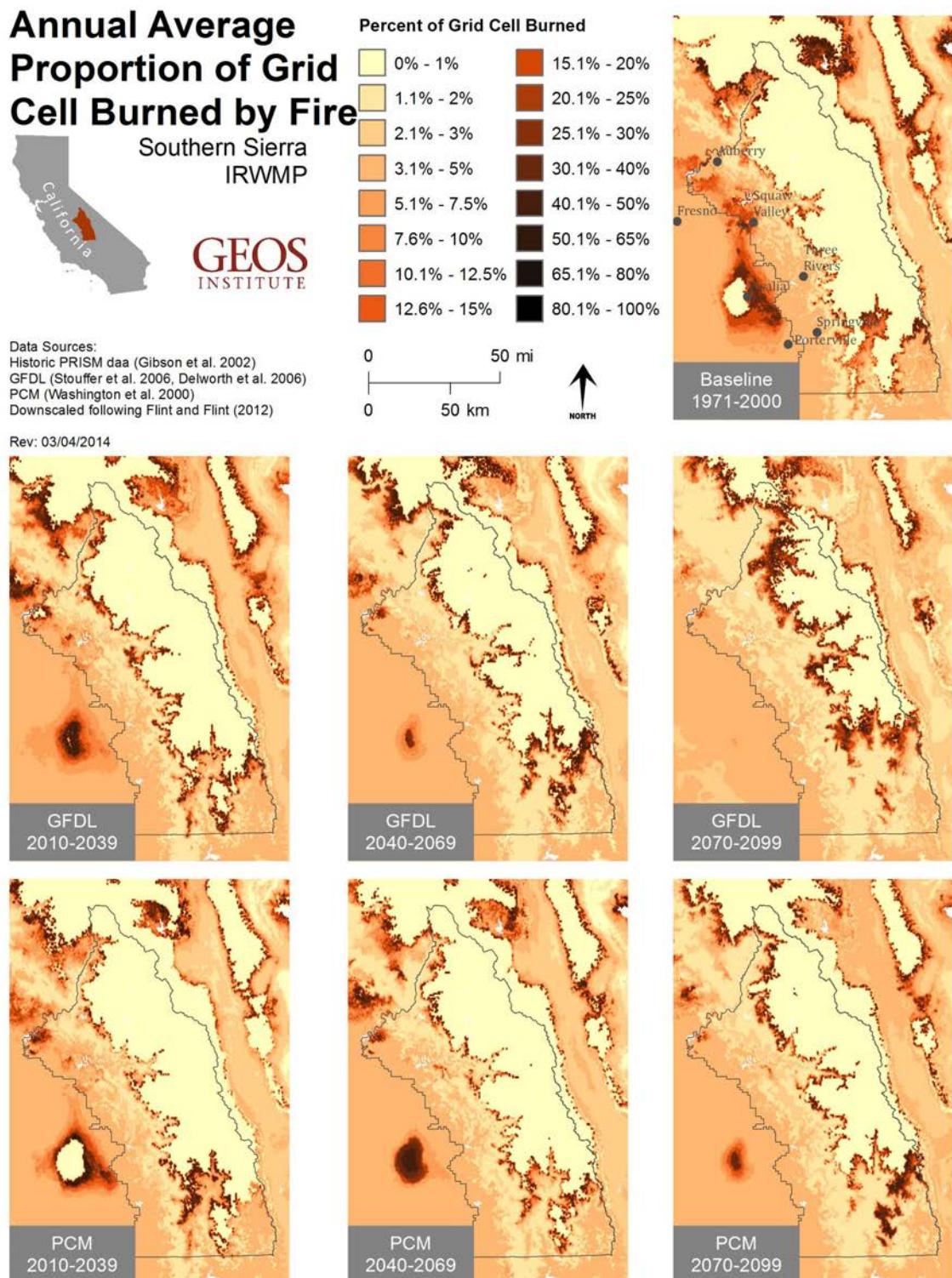


Figure 67. Modeled current and future annual vegetation carbon across the Southern Sierra Integrated Regional Water Management area in California, based on output from 2 different global climate models (GFDL and PCM), the A2 emissions scenario, and the MC1 dynamic vegetation model. Note that the MC1 model does not consider current (actual) vegetation or human influence.

