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HOT OFF THE PRESS –

The Most Recent Scenarios of Future Climate Change for Eastern North America from the 40 Global Climate Models used in the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC)

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10 September 2013

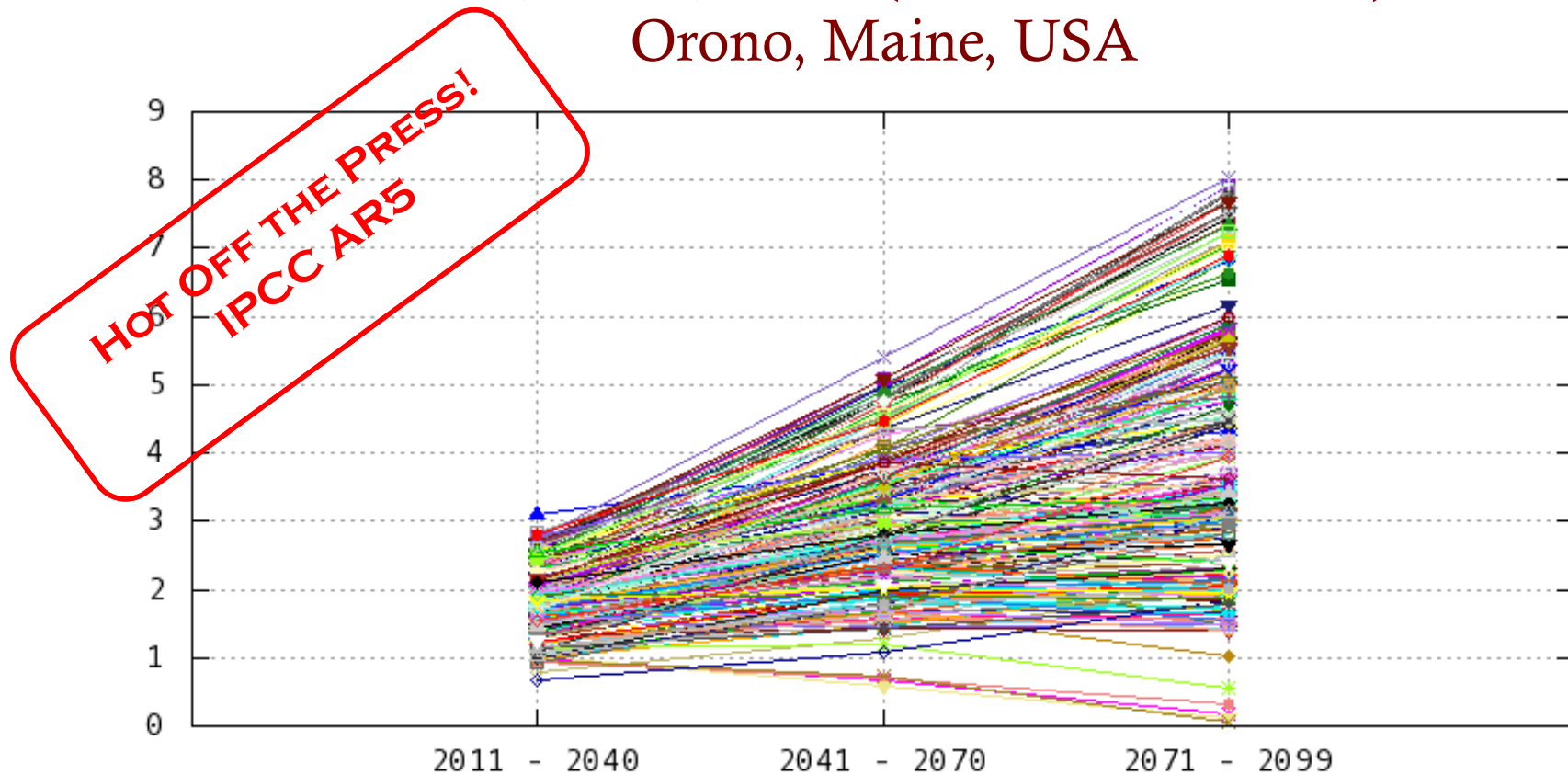
What was done?

- Output from all 40 global climate models (GCMs) used in the IPCC AR5 were downloaded in their native format to the UPEI Climate Database
- Output converted, formatted, interpreted, analyzed and mapped
- 40 GCMs x 1-6 runs x 4 RCPs = ~312 future projections
- Ensemble approach used



Future Projections

Annual Mean Temperature anomaly ($^{\circ}\text{C}$)
2020s, 2050s, 2080s (baseline 1961-1990)
Orono, Maine, USA

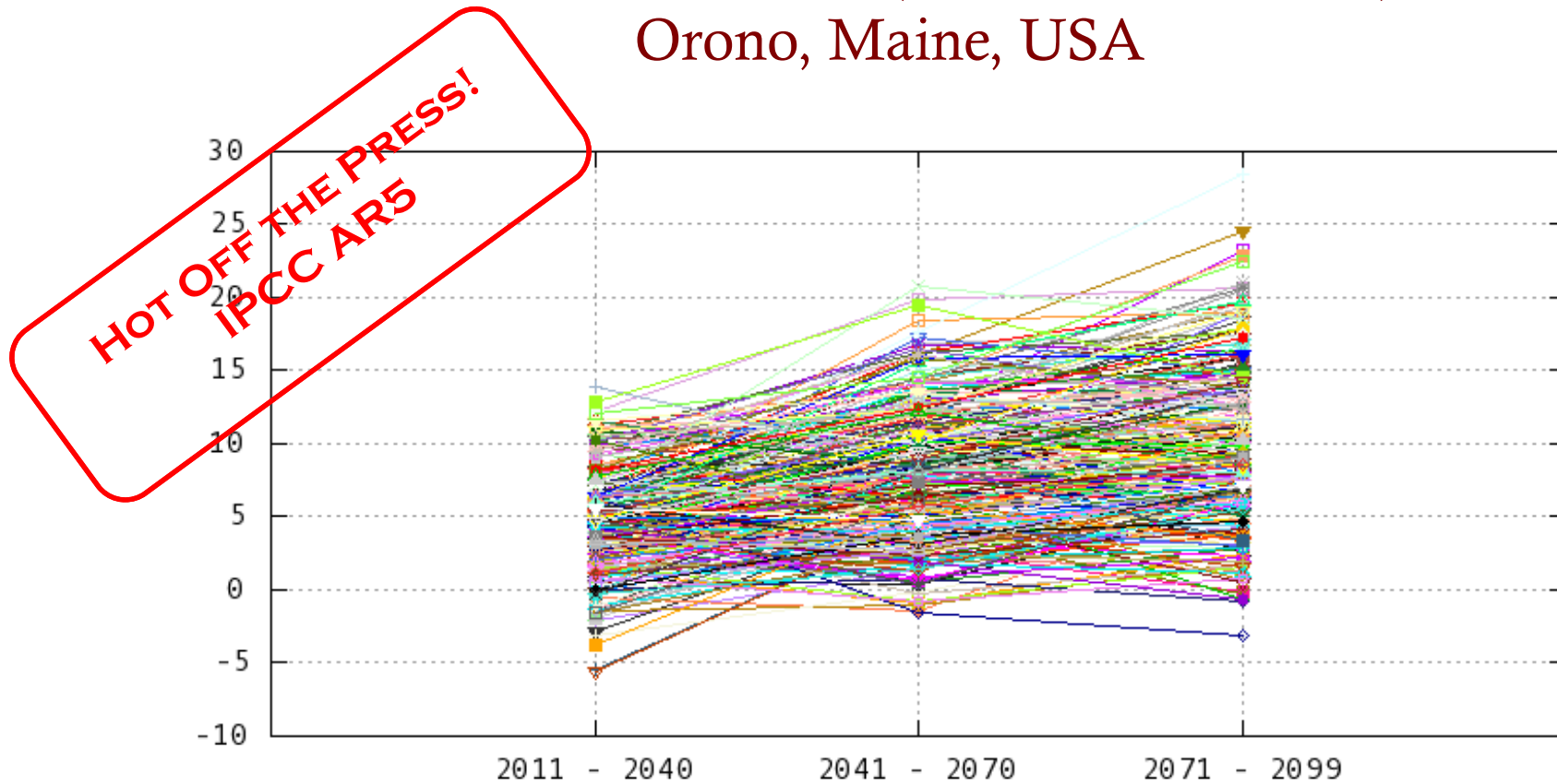


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Future Projections

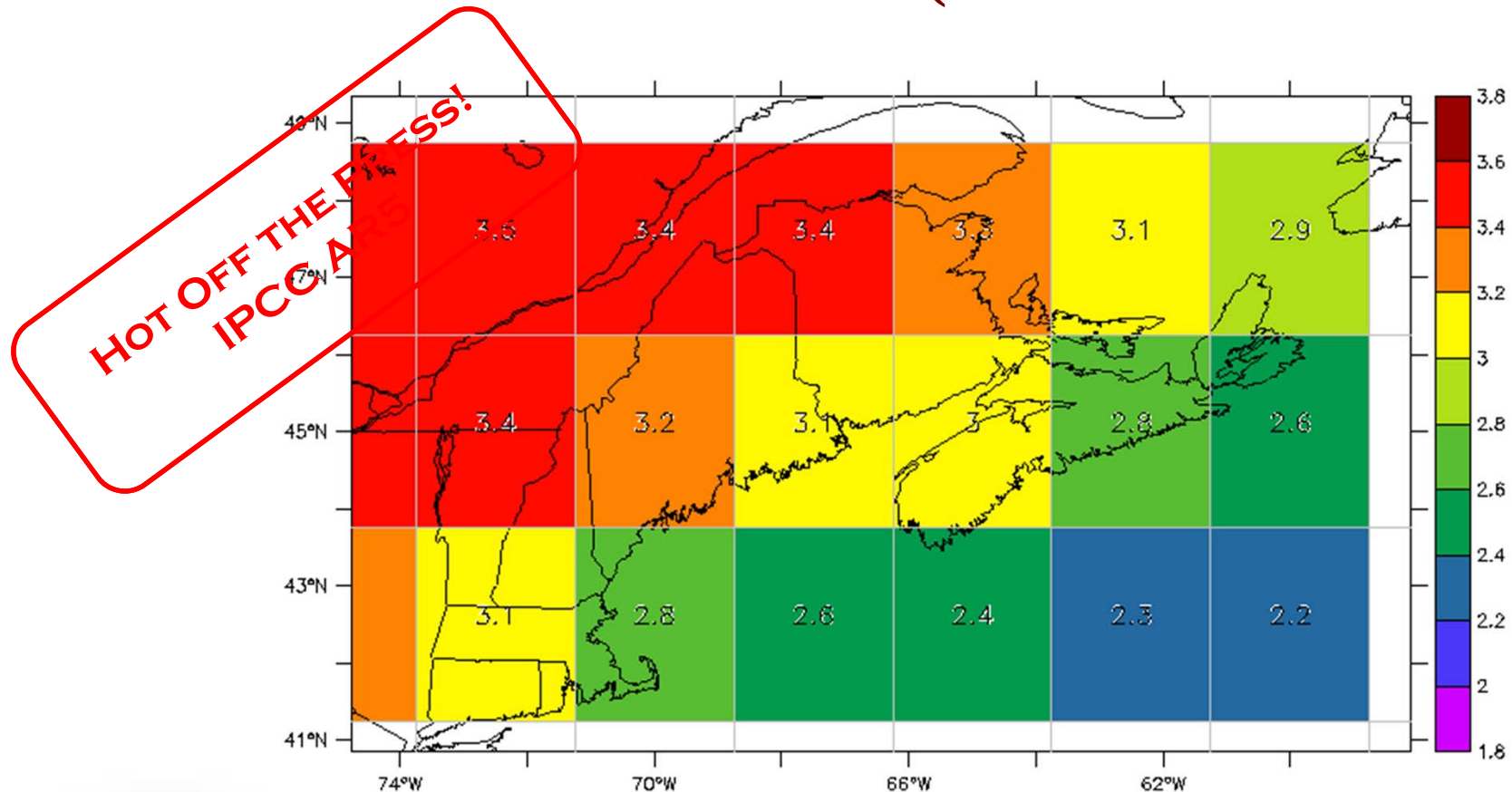
Annual Total Precipitation anomaly (%)
2020s, 2050s, 2080s (baseline 1961-1990)
Orono, Maine, USA



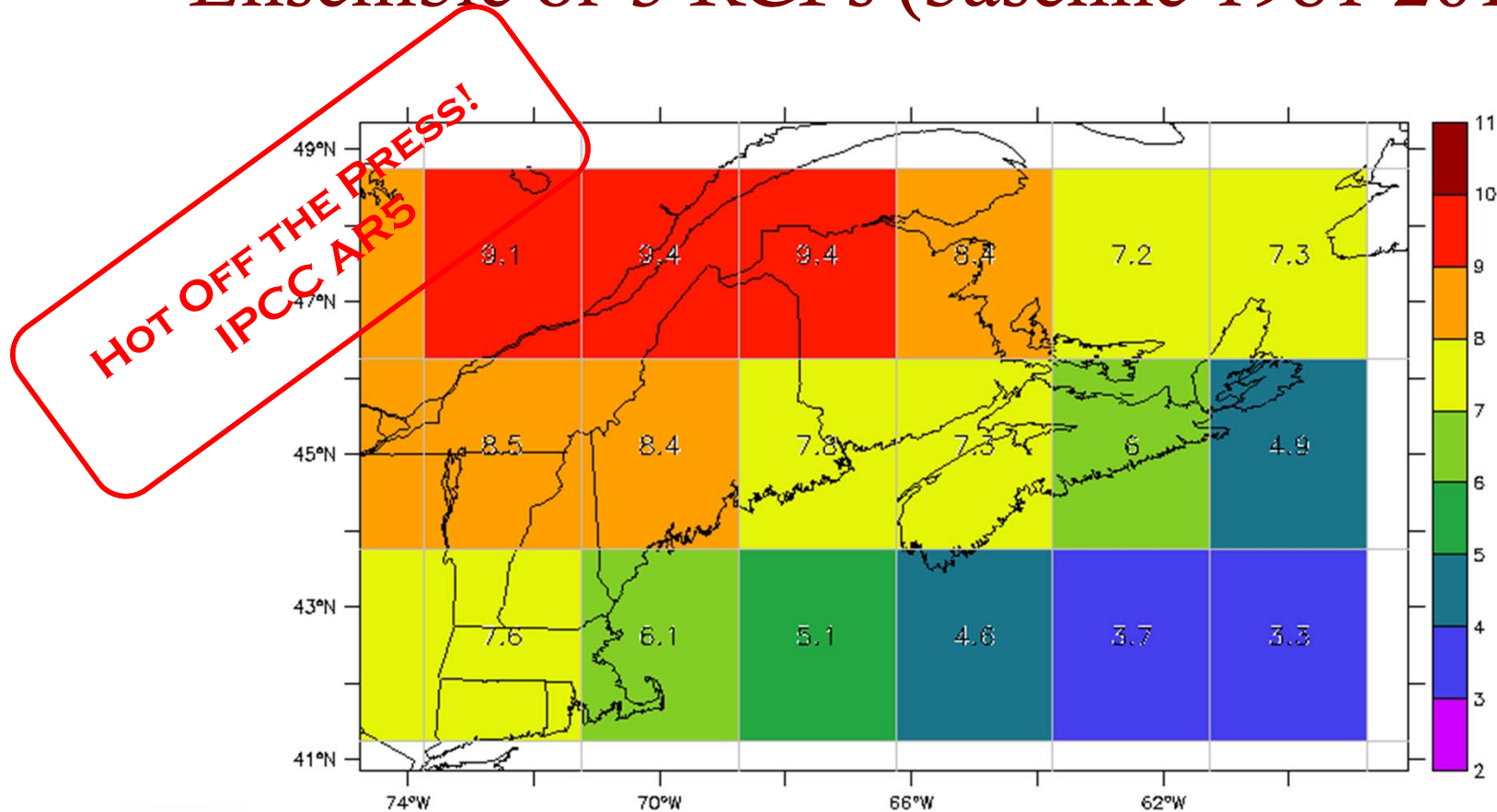
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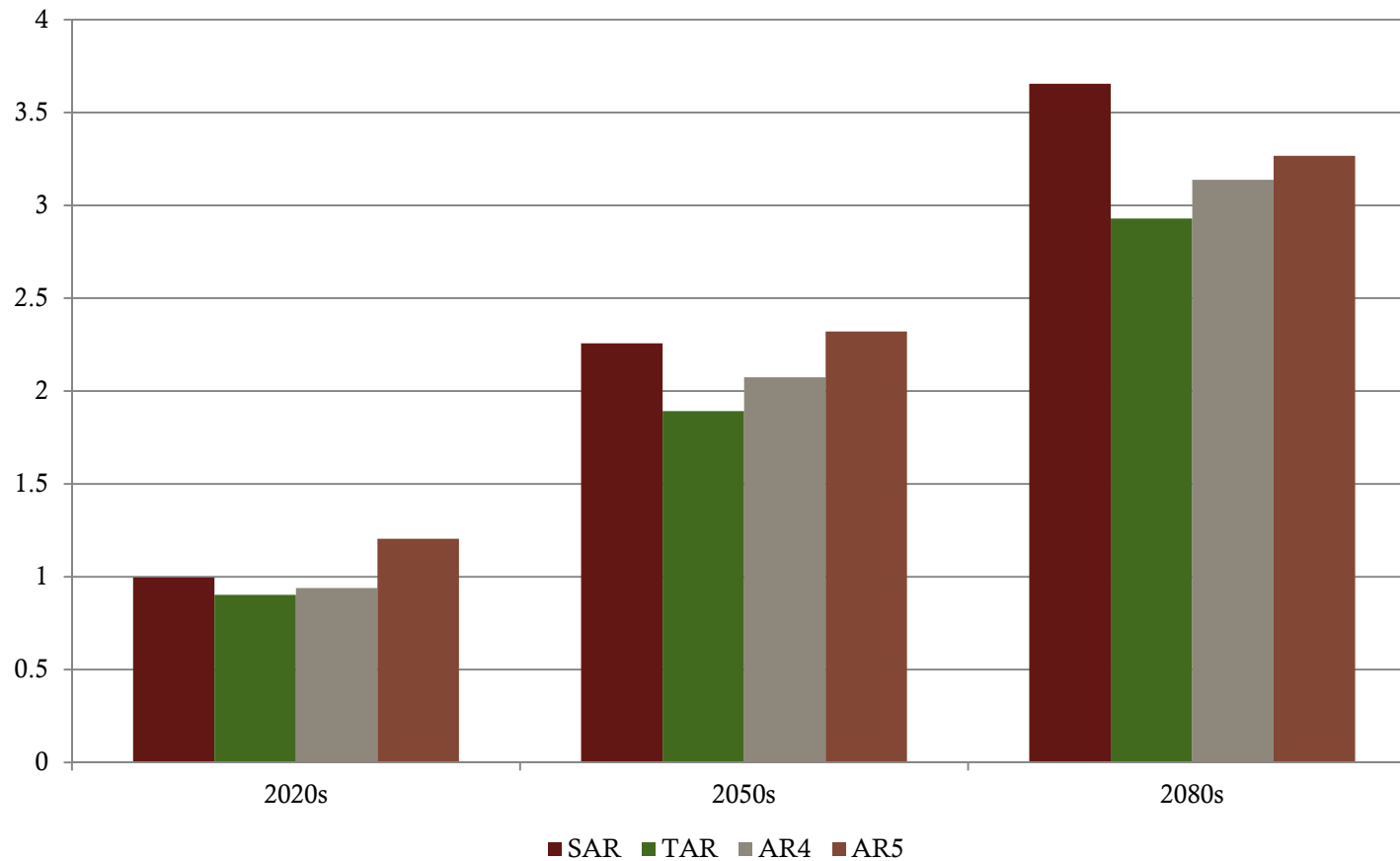
Gulf of Maine's Future Climate Temperature Change by 2050s (°C) Ensemble of 3 RCPs (baseline 1981-2010)



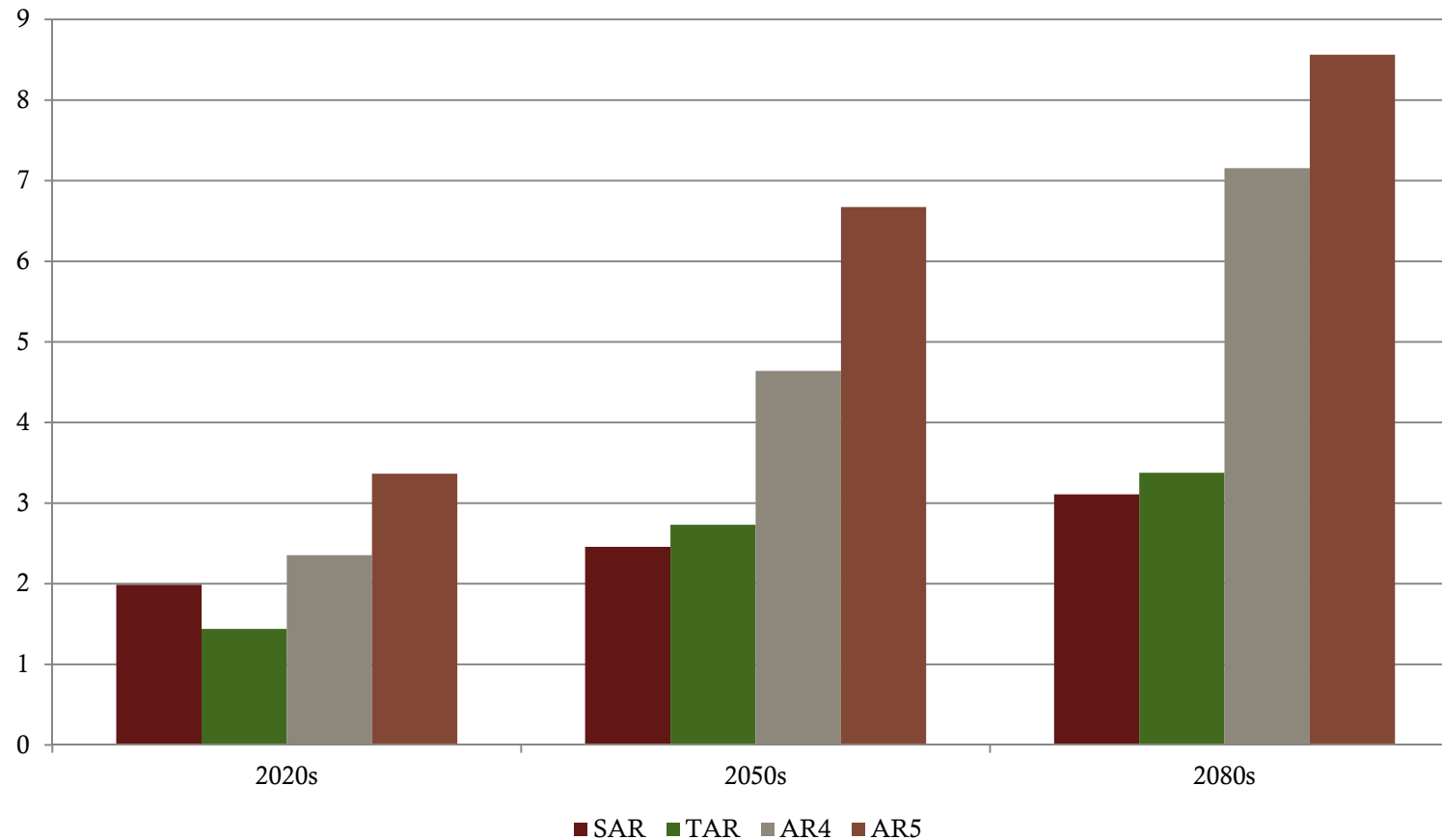
Gulf of Maine's Future Climate Precipitation Change by 2050s (%) Ensemble of 3 RCPs (baseline 1981-2010)



Comparison of the IPCC Assessment Reports: Future Projections of Temperature Changes All Model Ensemble Orono, Maine, USA



Comparison of the IPCC Assessment Reports: Future Projections of Precipitation Changes All Model Ensemble Orono, Maine, USA



Conclusions

- IPCC AR5 has over 40 GCMs providing future projections of climate for consideration using 4 RCPs
- While providing no guarantees, an ensemble of all GCMs can best represent historical climate and is more likely to accurately represent future climate conditions
- When compared with previous IPCC assessments, ensemble projections from AR5 for Orono show slightly increasing temperature projections and increasing precipitation projections





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