

**Sea Level Solutions Center (SLSC), Institute of Environment, Florida  
International University**

# **Updating the Statewide Extreme Rainfall Projections**

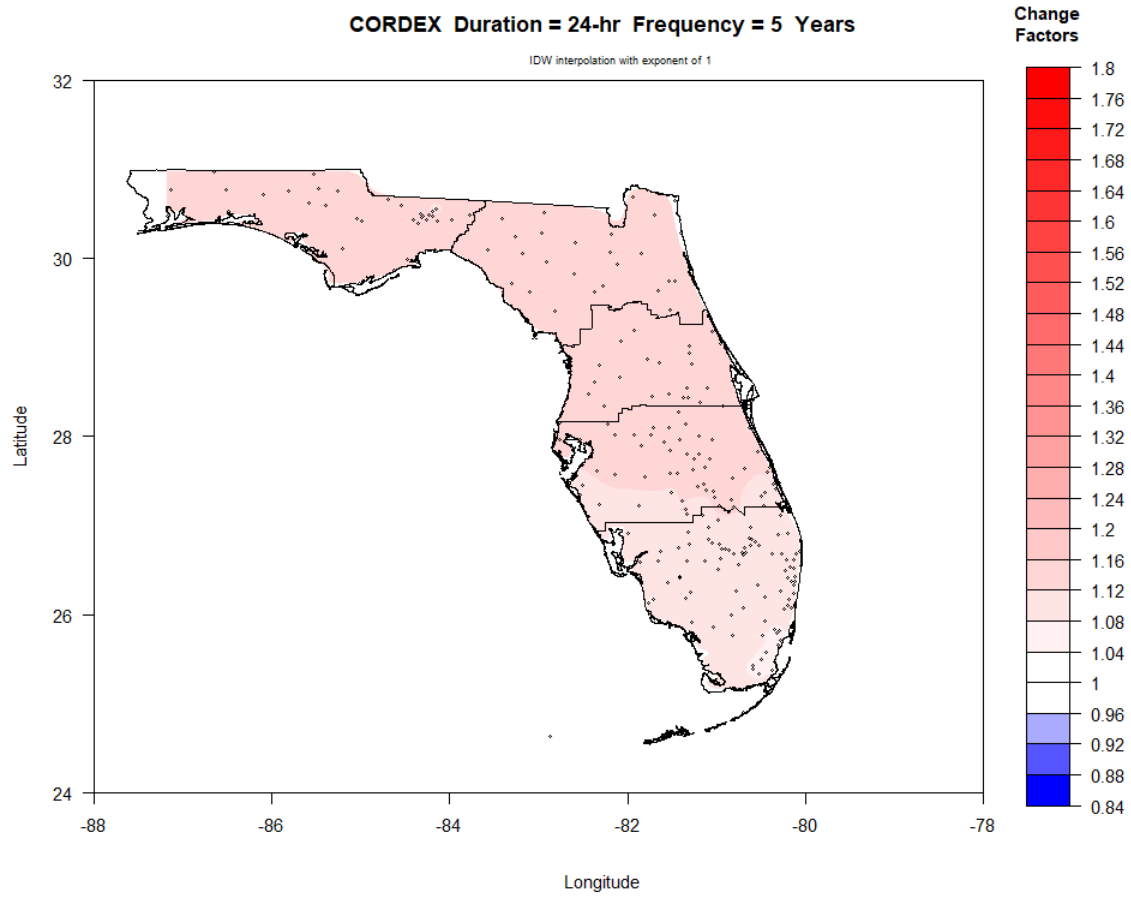
**ADDENDUM to Final Report - June 1, 2021**

Dr. Jayantha Obeysekera, P.E., Director (SLSC, Lead PI)  
Dr. Mike Sukop, P.G., C.Hg., Professor (SLSC, Co-PI)  
Dr. Tiffany Troxler, Director of Science (SLSC, Co-PI)  
Dr. Anupama John, Post-doctoral Associate (SLSC)

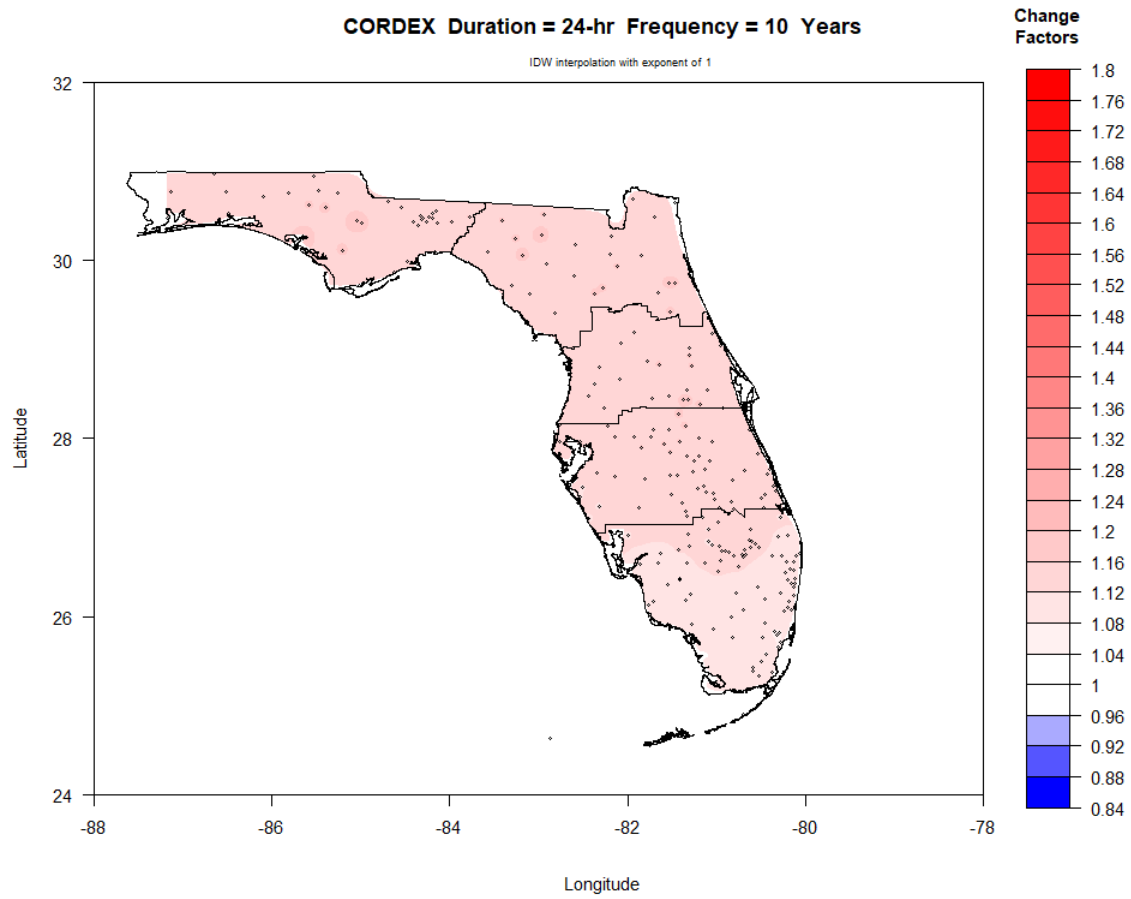
### **APPENDIX III. Change Factor Maps for NEAR period (2030-2069)**

As a deliverable required by the following task in the project “FIU SLSC shall generate maps of projected precipitation extremes for durations, return periods, and future periods of interest using GIS tools and shall post the maps online for public access”, FIU has team has a developed a series of maps for Change Factors across all the State of Florida for different climate data sets. The Change Factors are more useful for practitioners and they can be used with Atlas 14 DDF curves, or more importantly, other DDF curves developed by other state agencies (e.g. FDOT) or counties. The website described in Appendix IV provides convenient access to raw data for Atlas 14 stations.

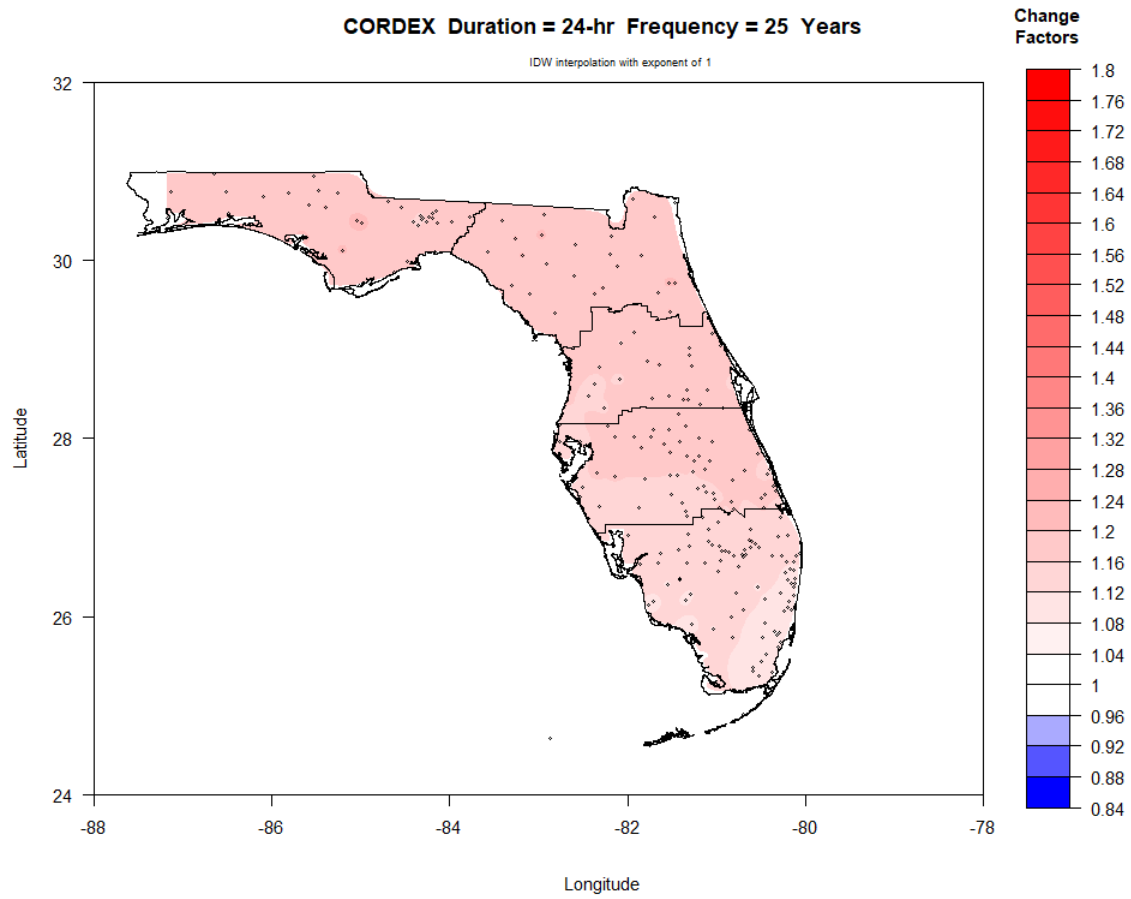
Presented herein are maps of the median change factors across Florida for the NEAR period (2030-2069) generated using IDW interpolation with an exponent of 1. The maps were created for durations: 24-hr, 3-day, 7-day and 10-day, and return periods: 5-yr, 10-yr, 25-yr, 50-yr, 100-yr and 200-yr. Maps are provided for all climate datasets.



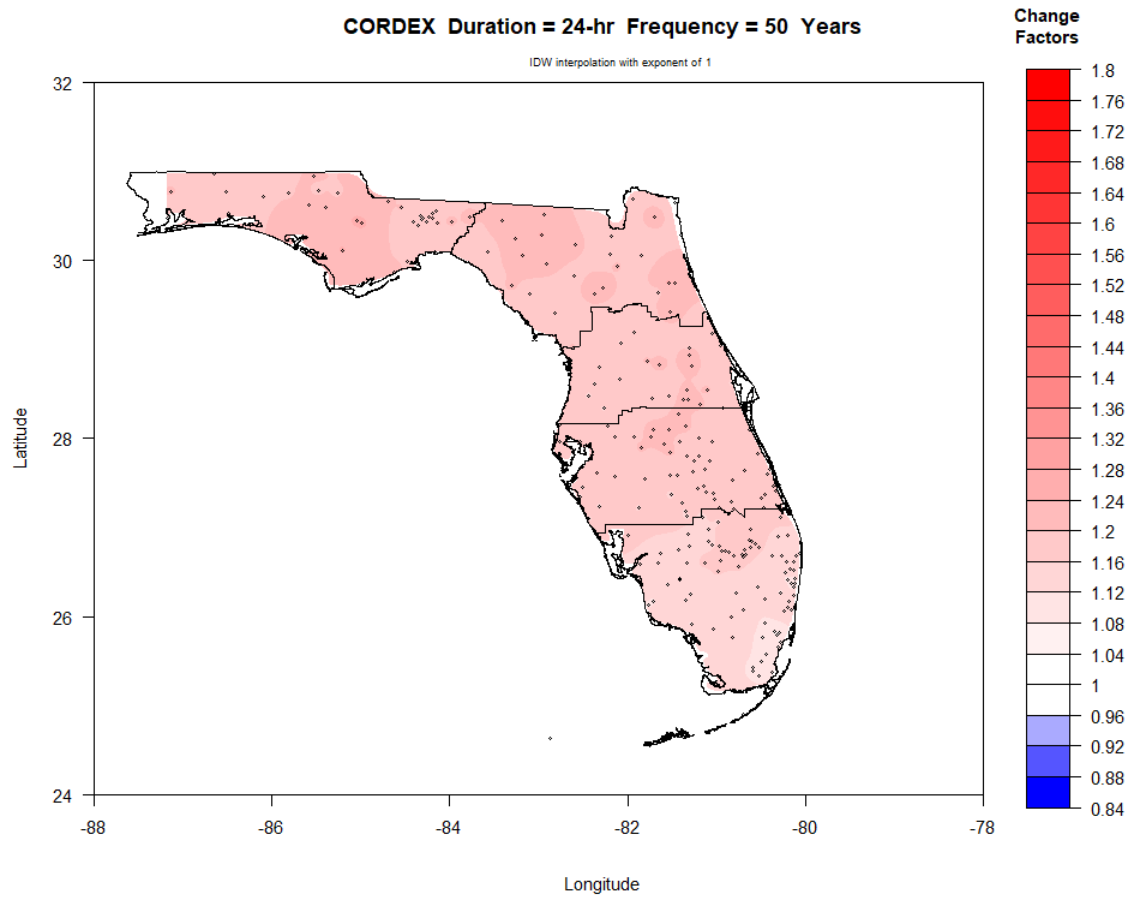
**Figure III-1. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 5-year return period.**



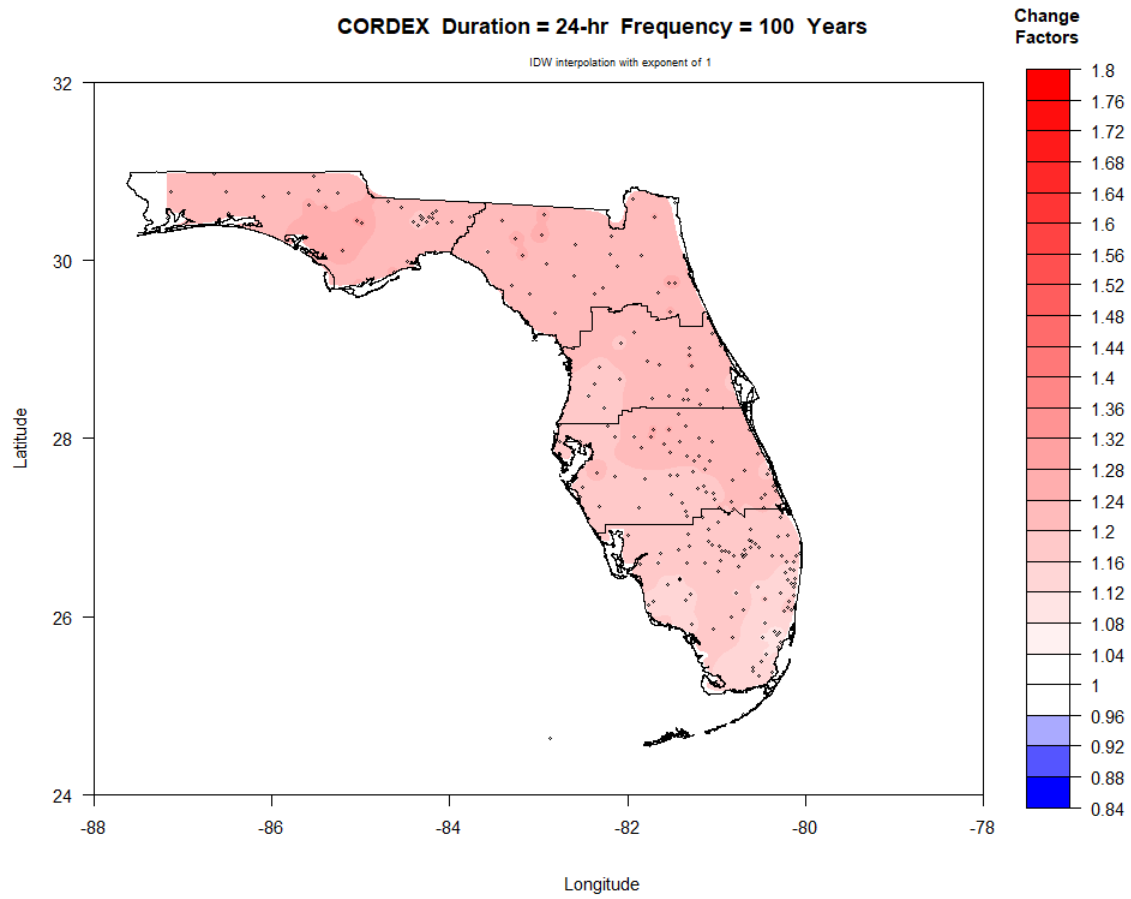
**Figure III-2. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 10-year return period.**



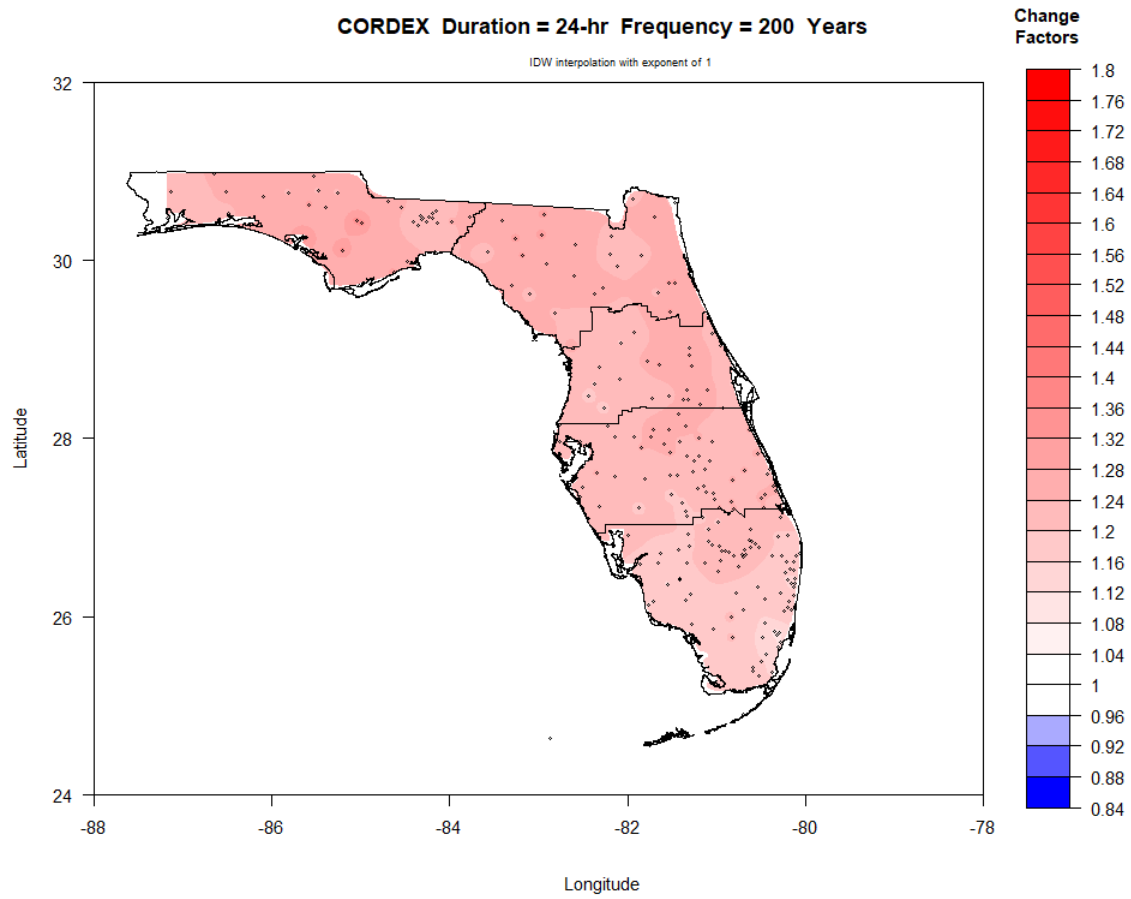
**Figure III-3. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 25-year return period.**



**Figure III-4. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 50-year return period.**

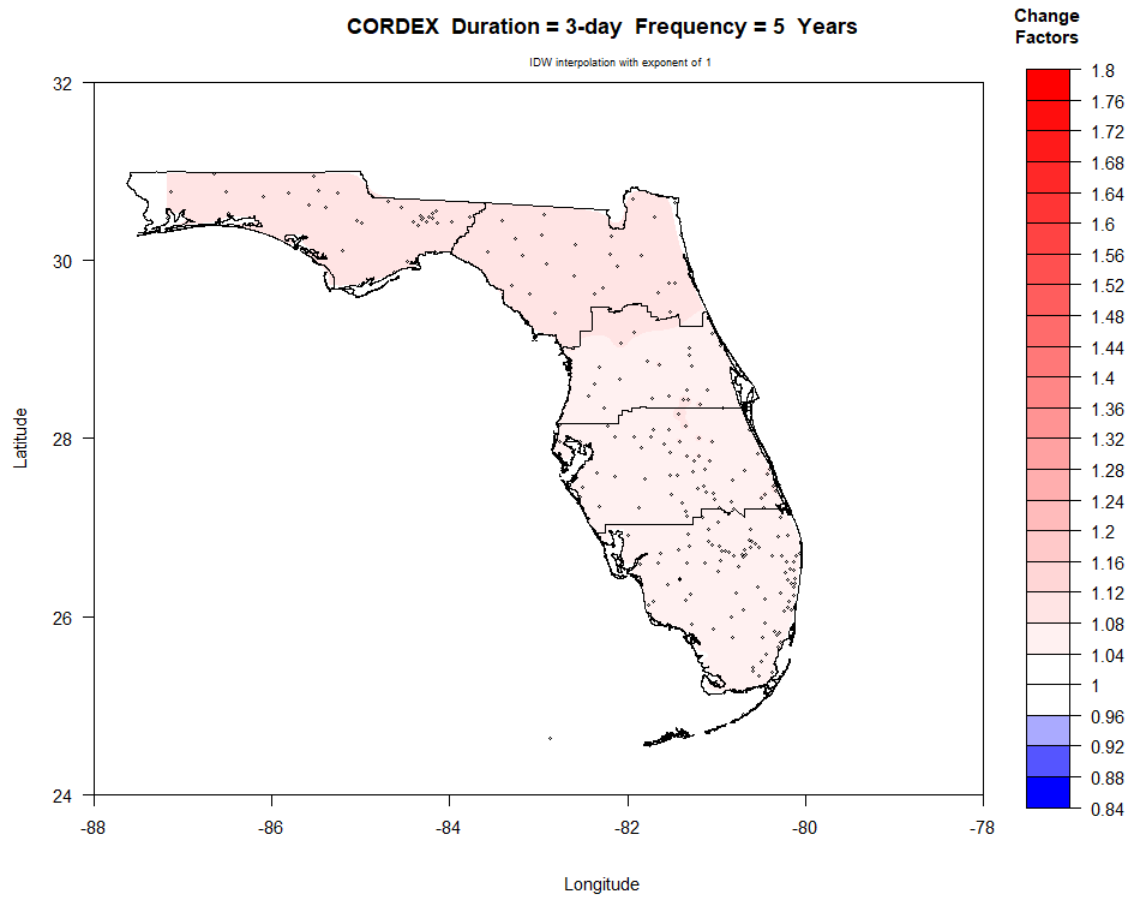


**Figure III-5. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 100-year return period.**

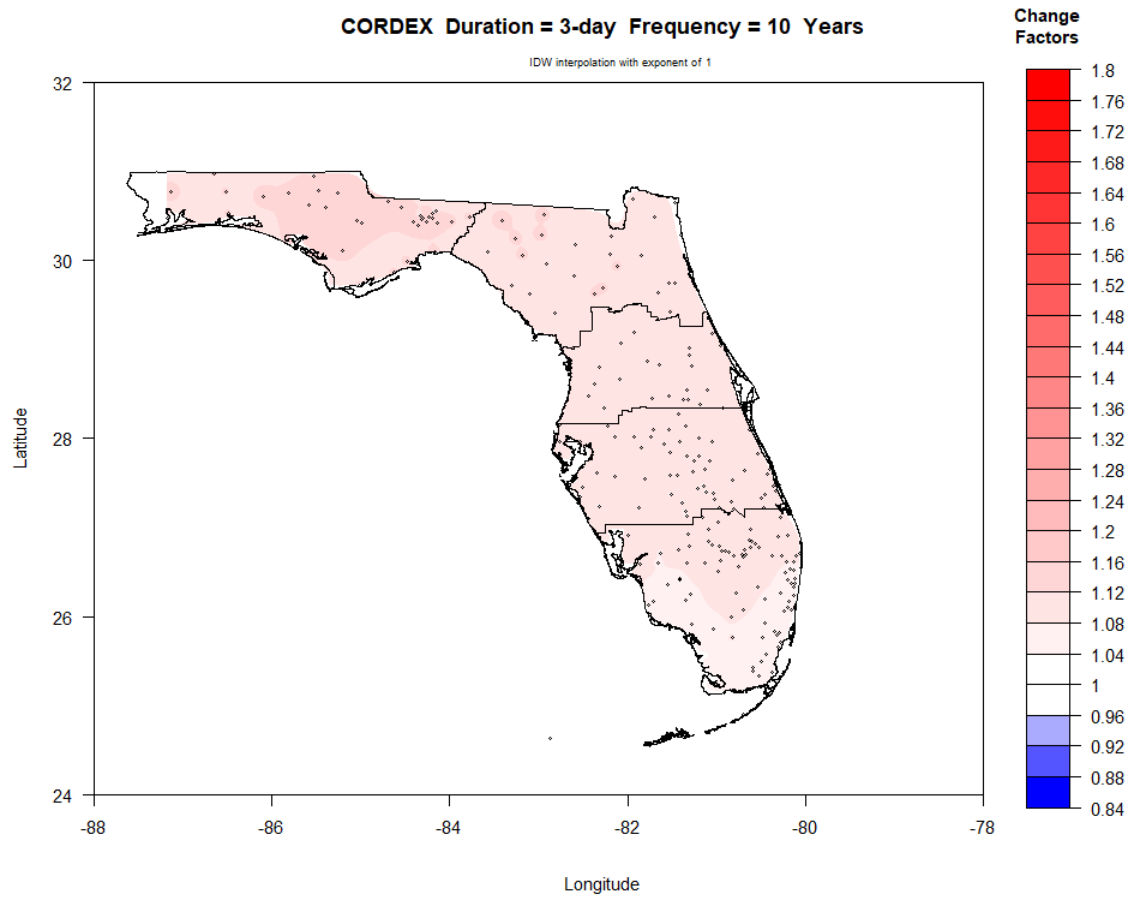


**Figure III-6. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 200-year return period.**

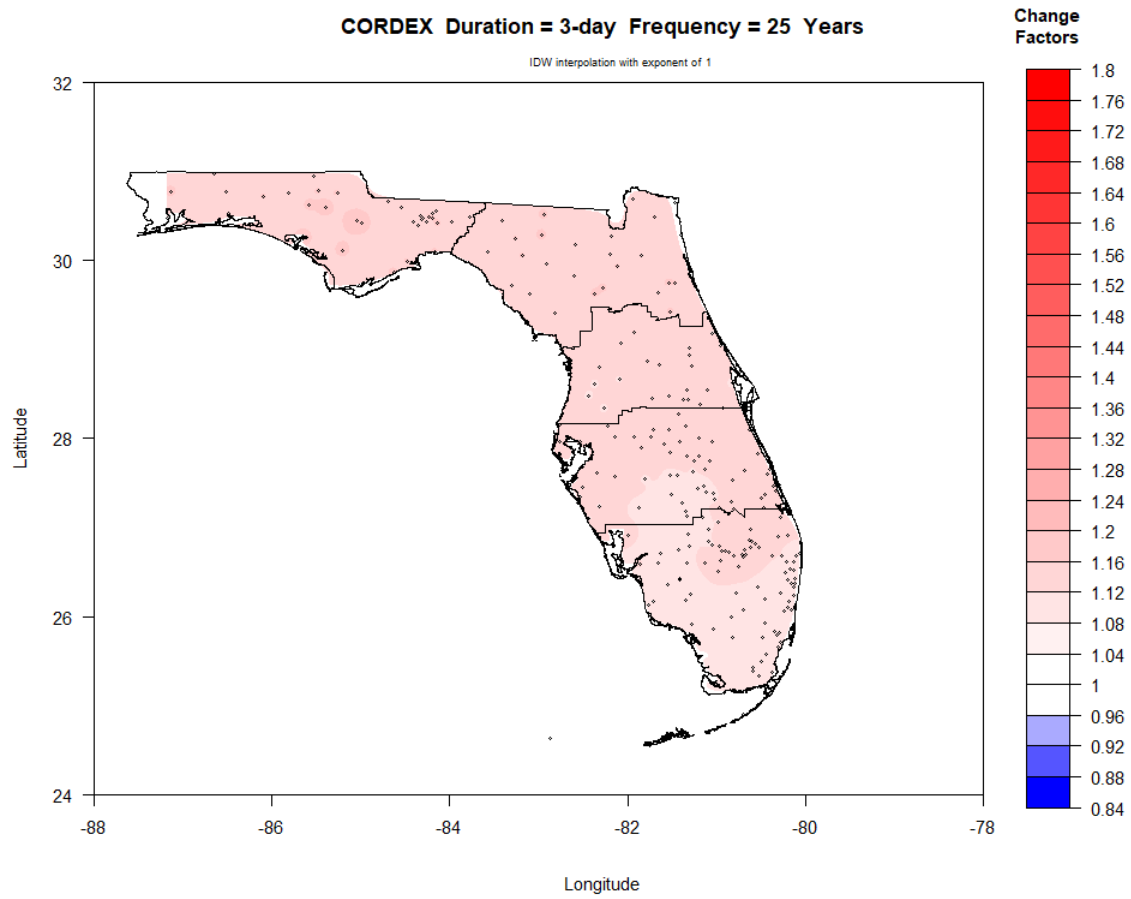




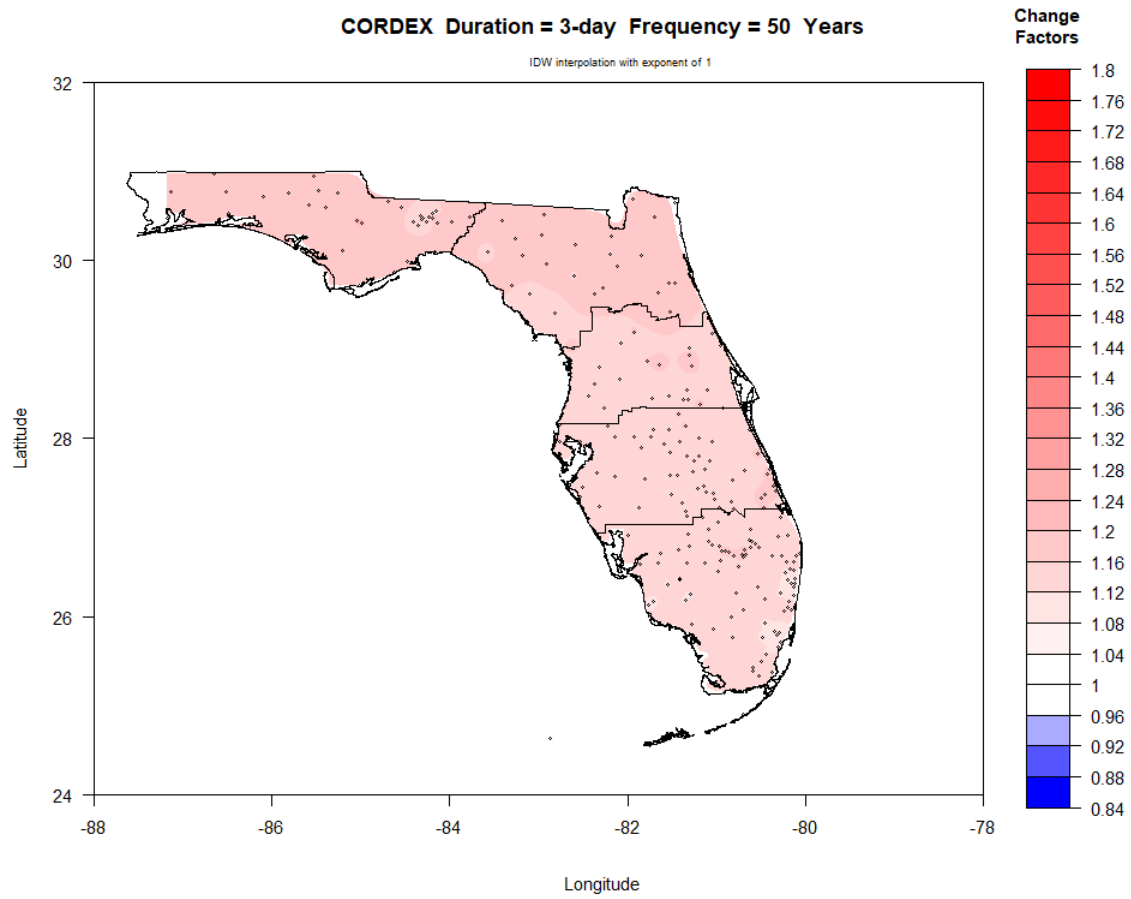
**Figure III-7. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 5-year return period.**



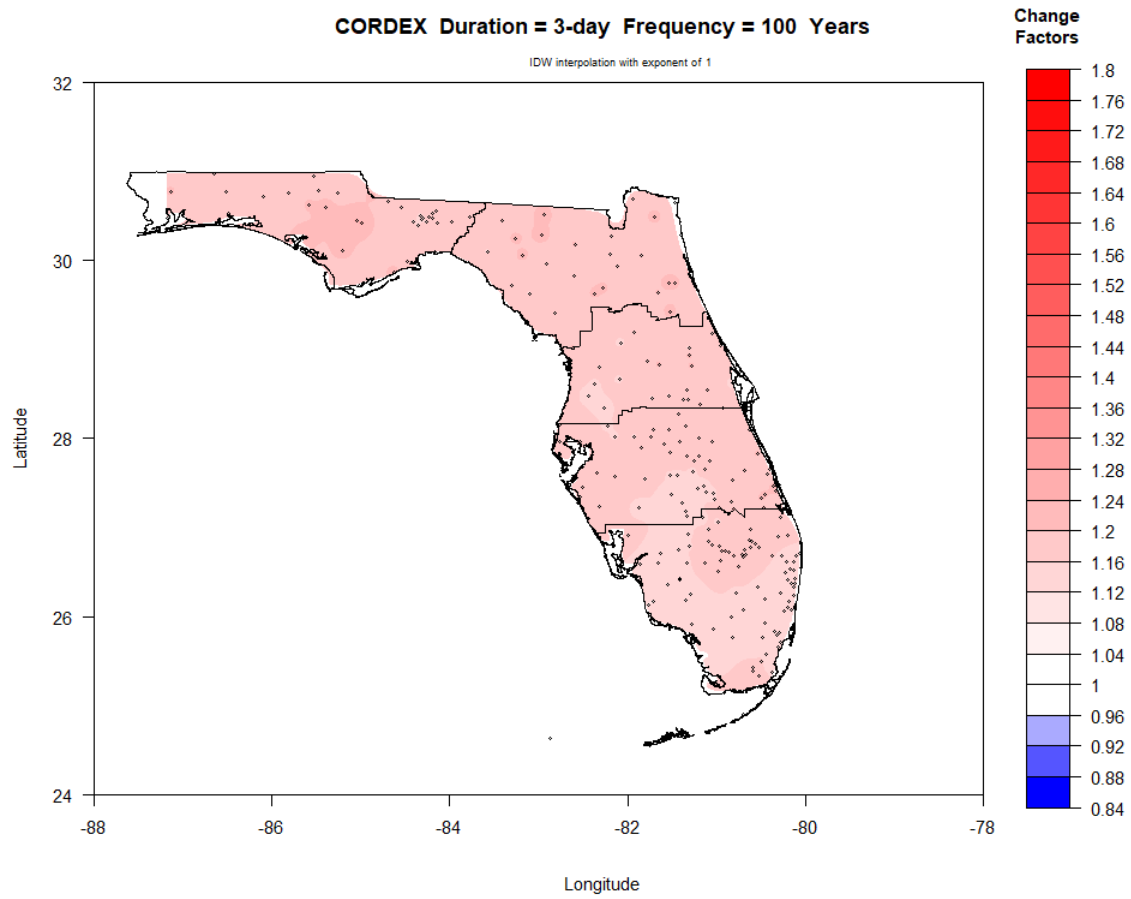
**Figure III-8. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 10-year return period.**



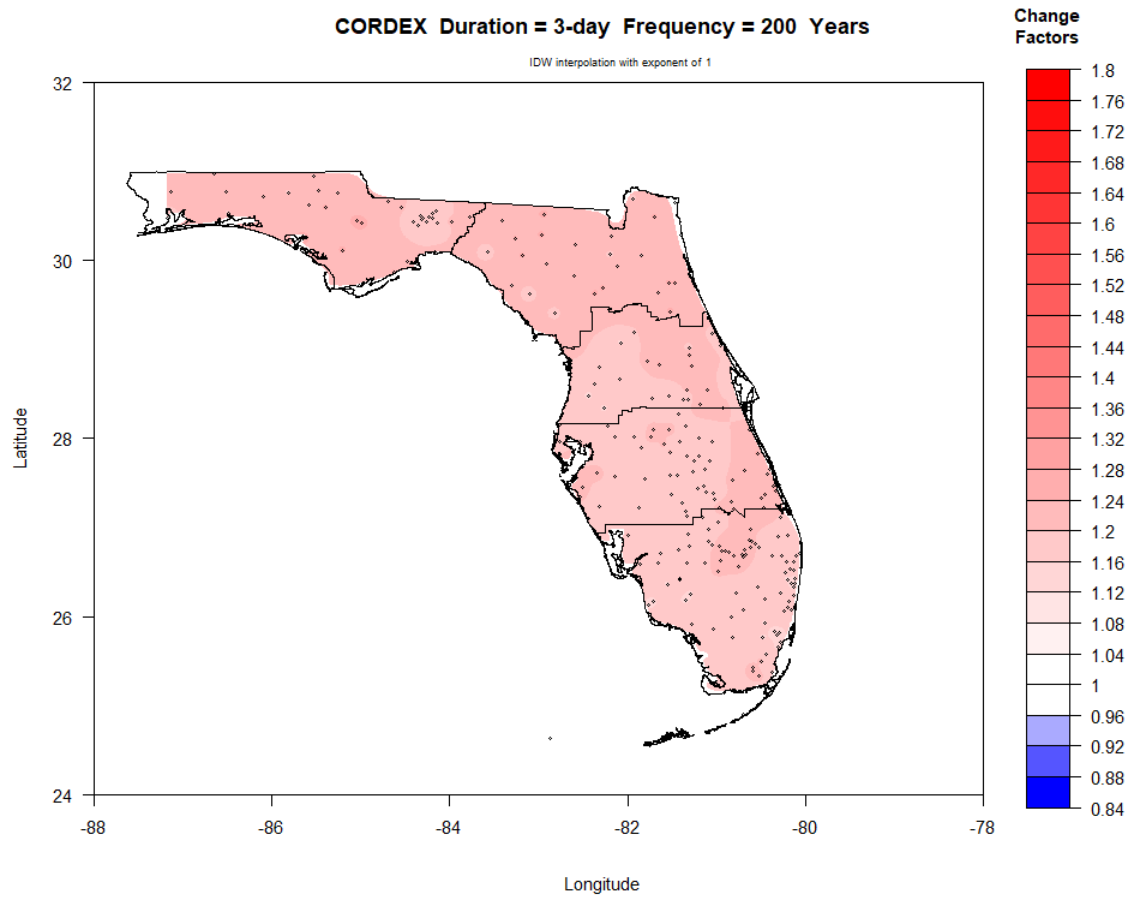
**Figure III-9. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 25-year return period.**



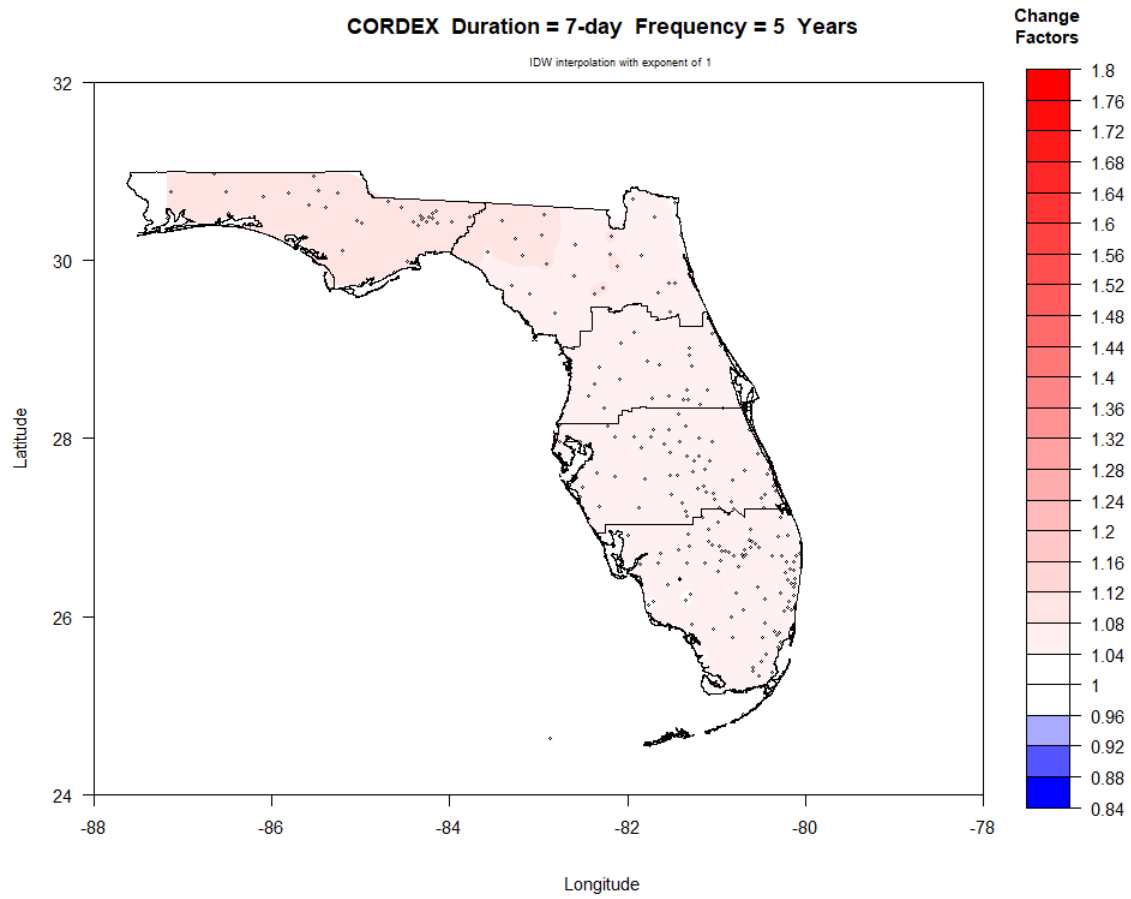
**Figure III-10. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 50-year return period.**



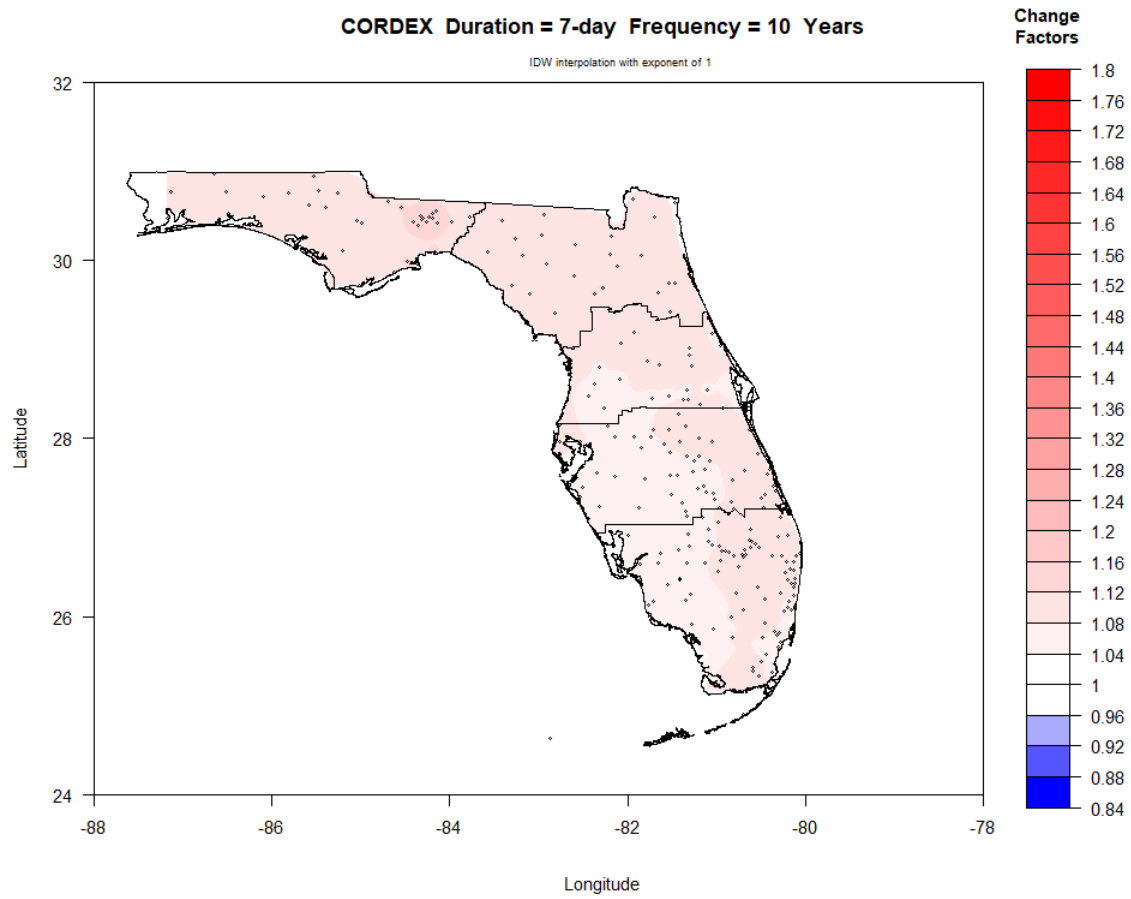
**Figure III-11. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 100-year return period.**



**Figure III-12. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 200-year return period.**

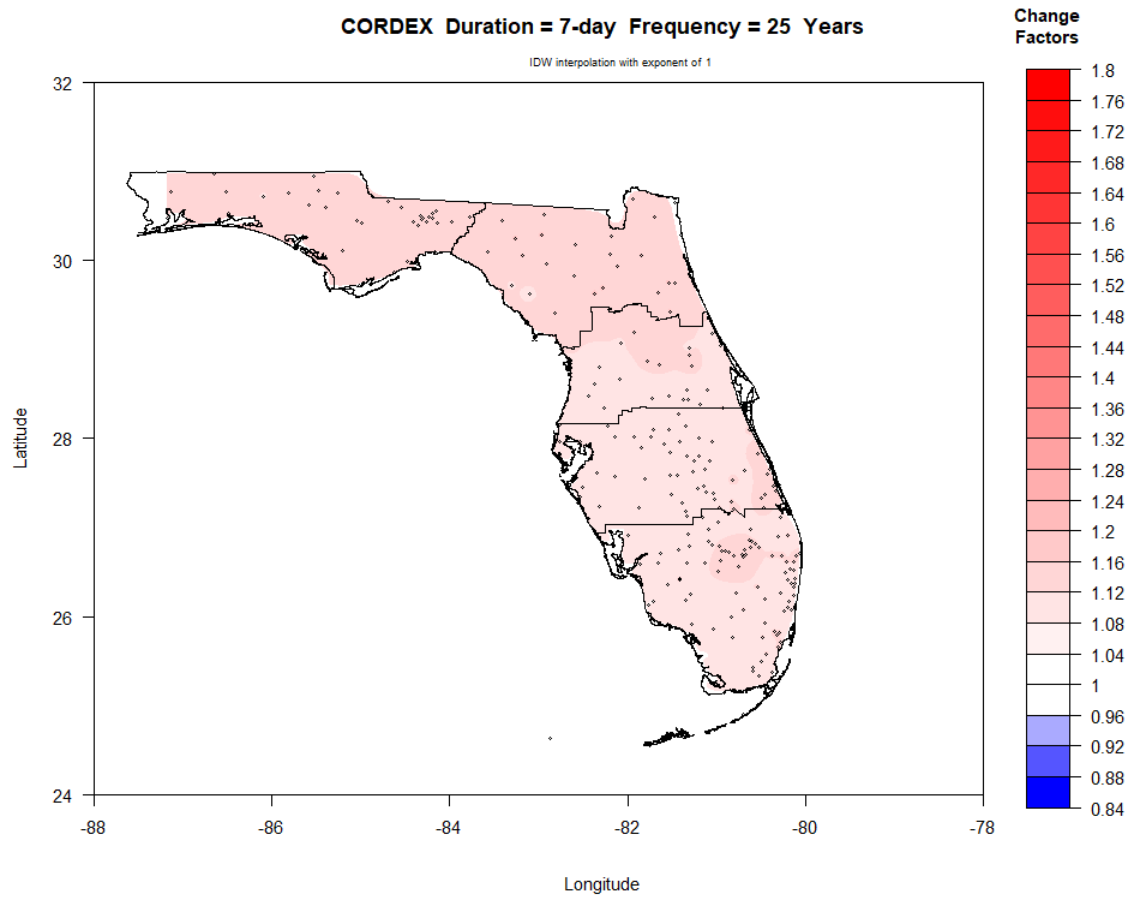


**Figure III-13. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 5-year return period.**

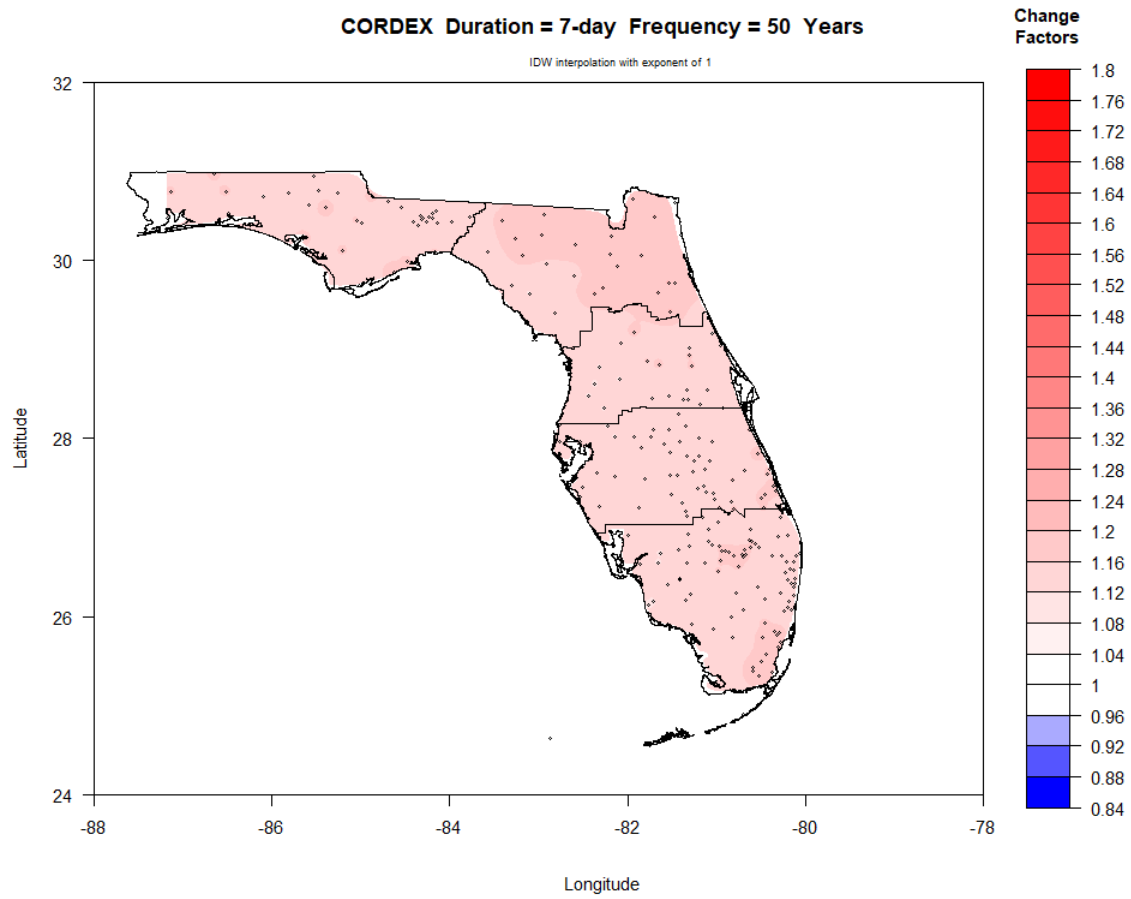


**Figure III-14. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 10-year return period.**

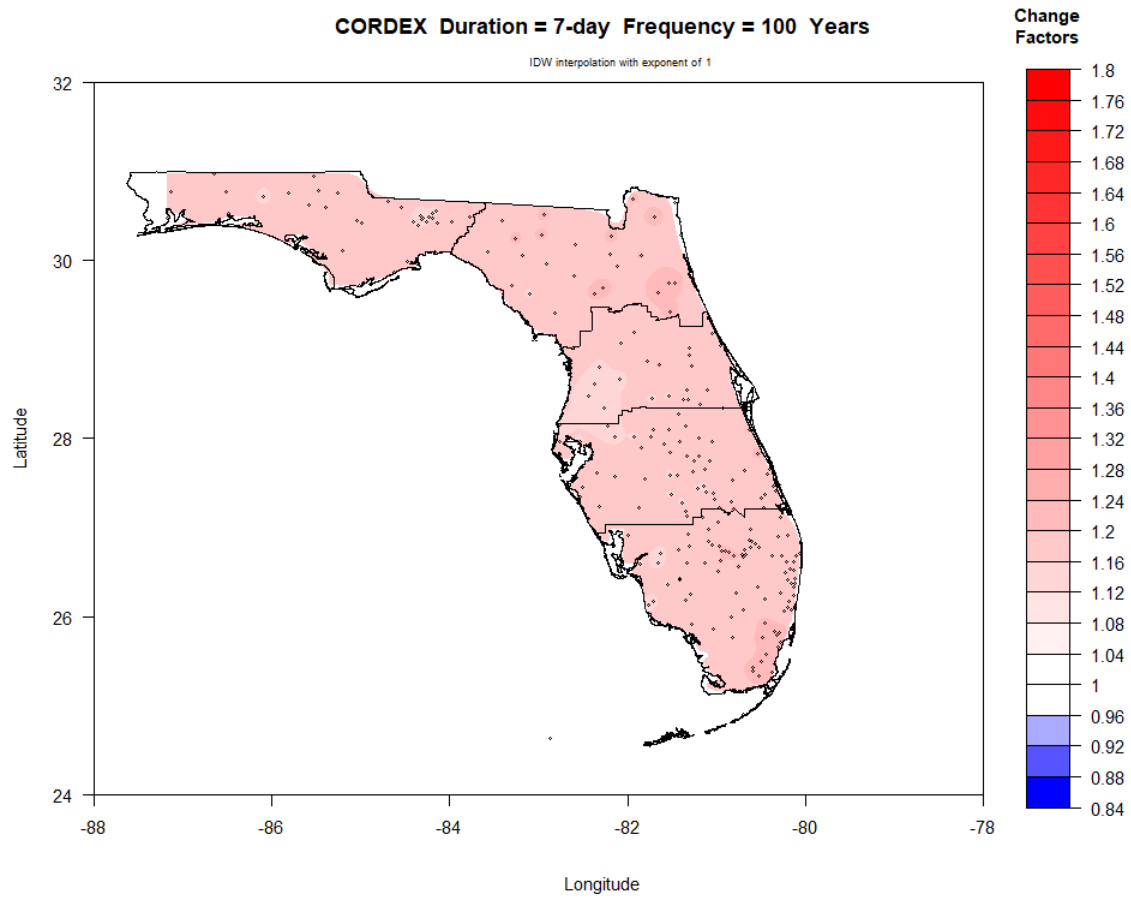




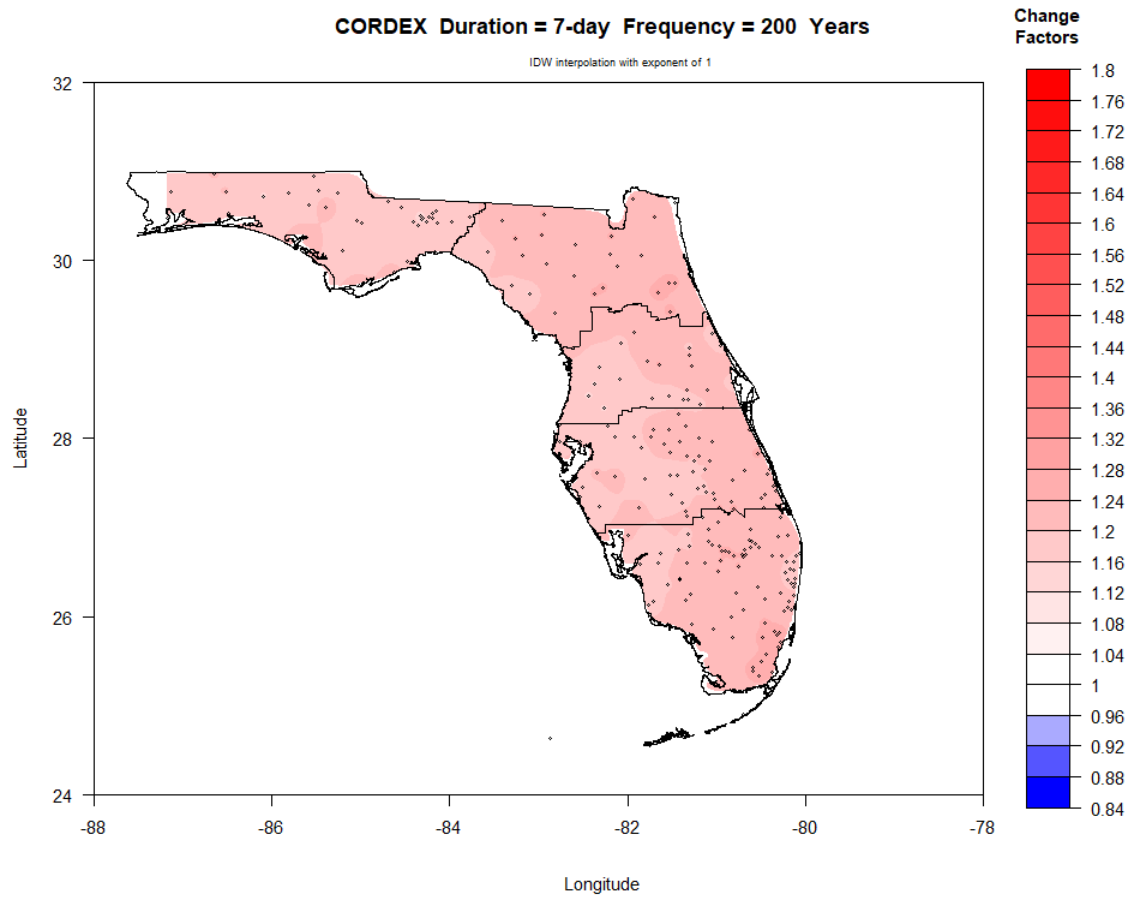
**Figure III-15. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 25-year return period.**



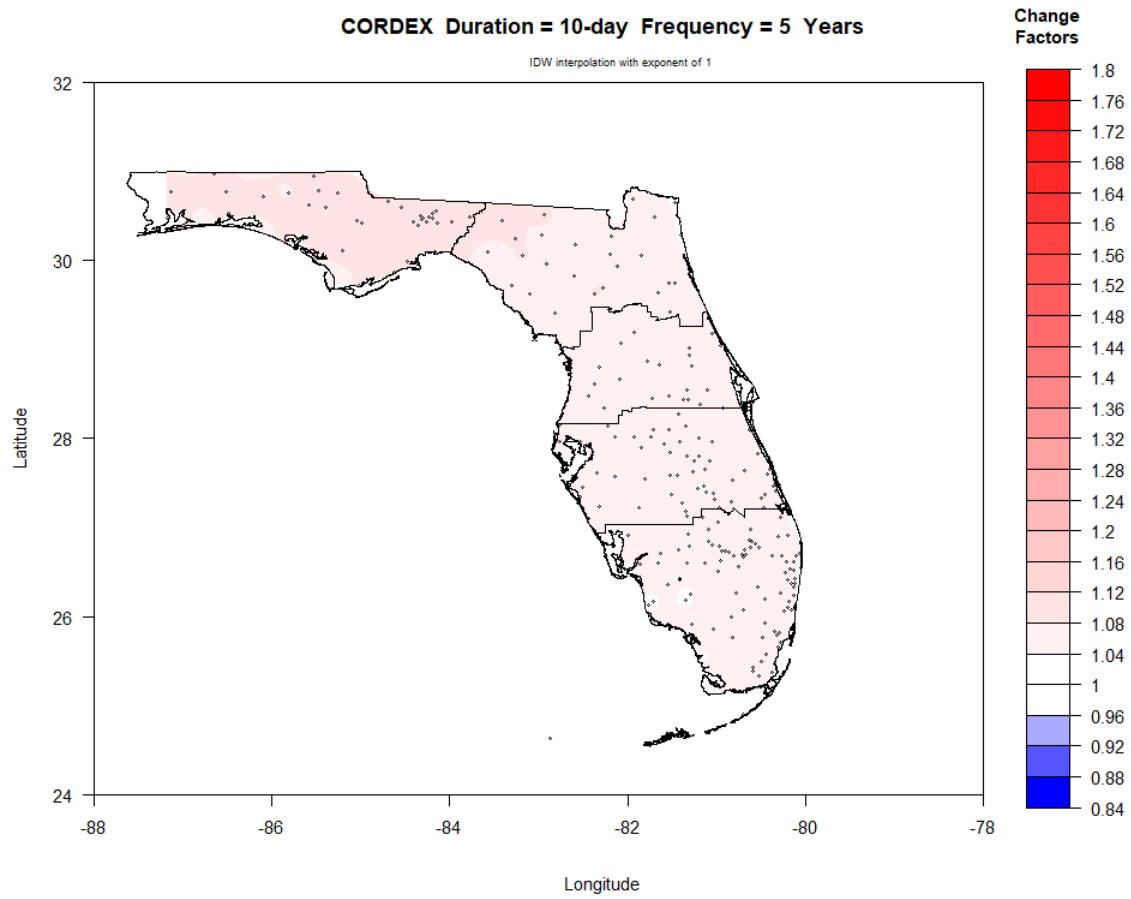
**Figure III-16. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 50-year return period.**



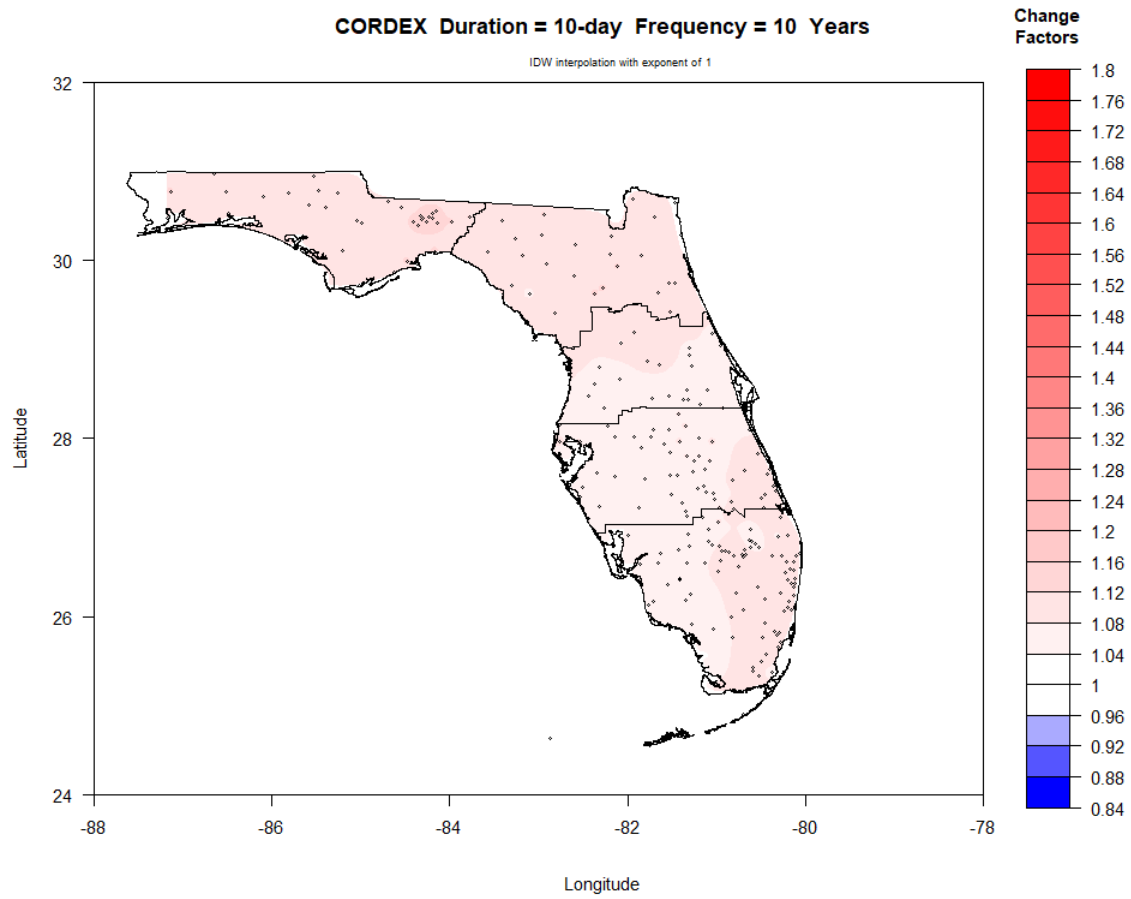
**Figure III-17. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 100-year return period.**



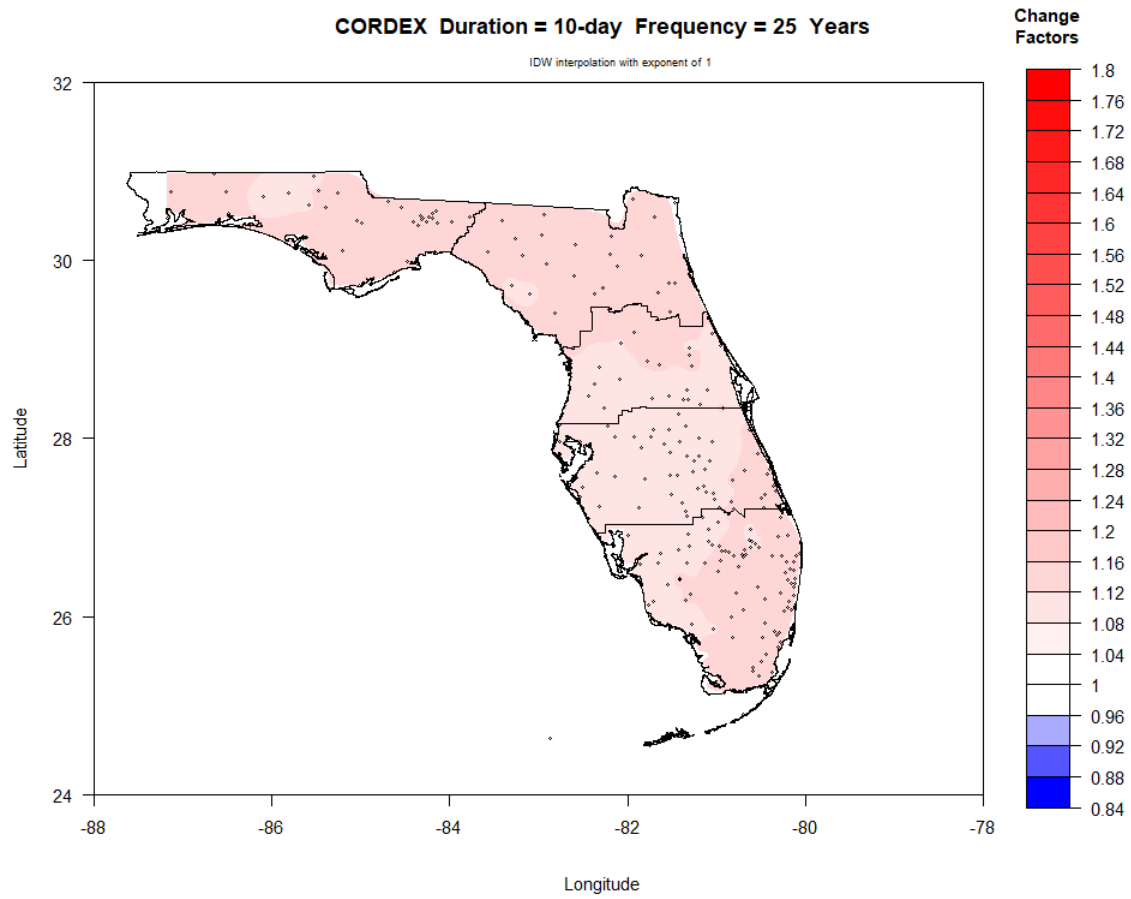
**Figure III-18. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 200-year return period.**



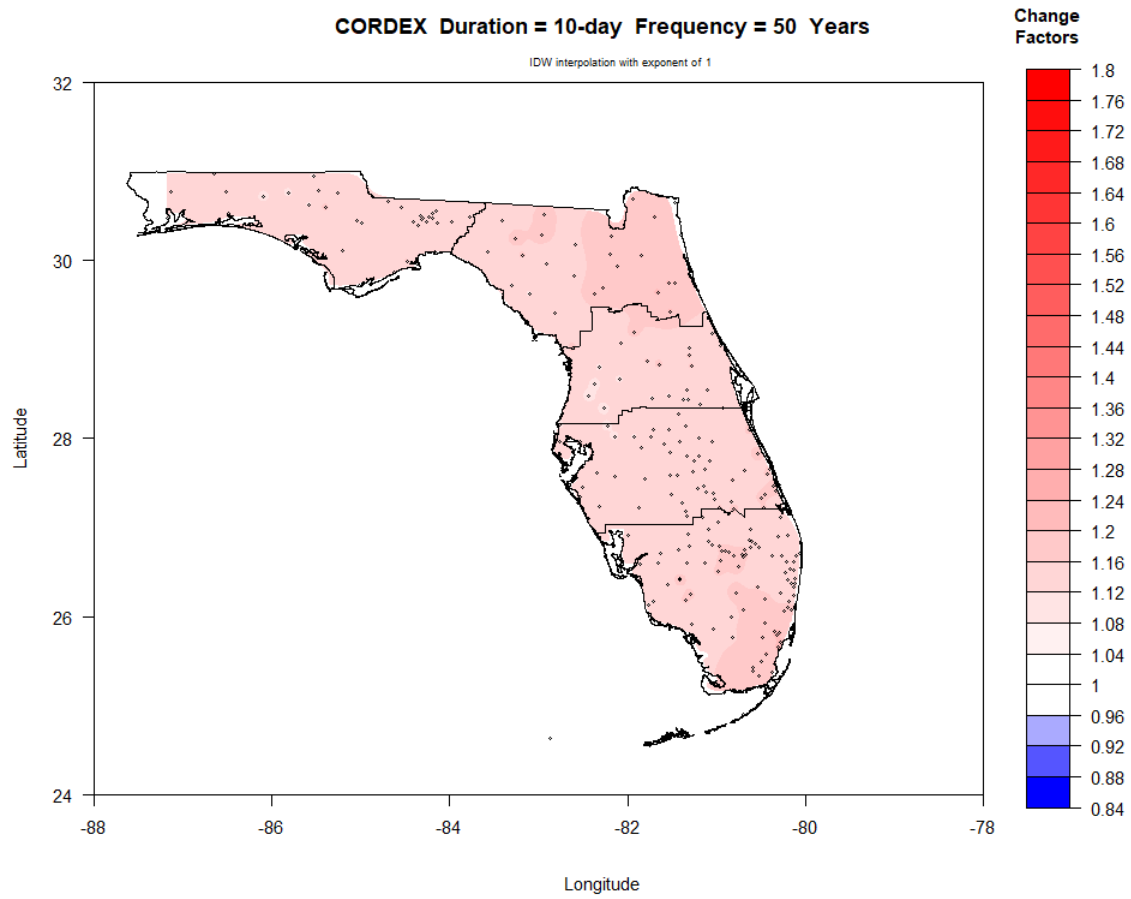
**Figure III-19. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 5-year return period.**



**Figure III-20. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 10-year return period.**

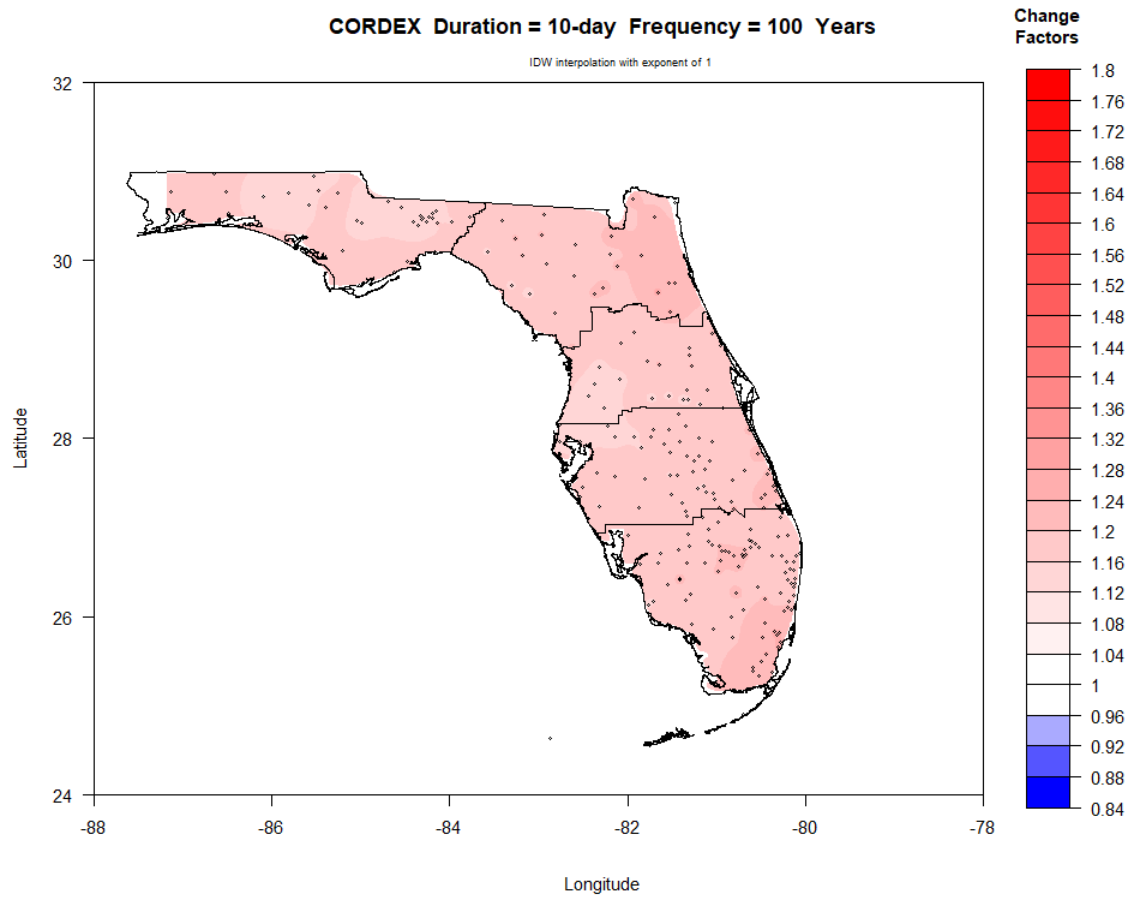


**Figure III-21. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 25-year return period.**

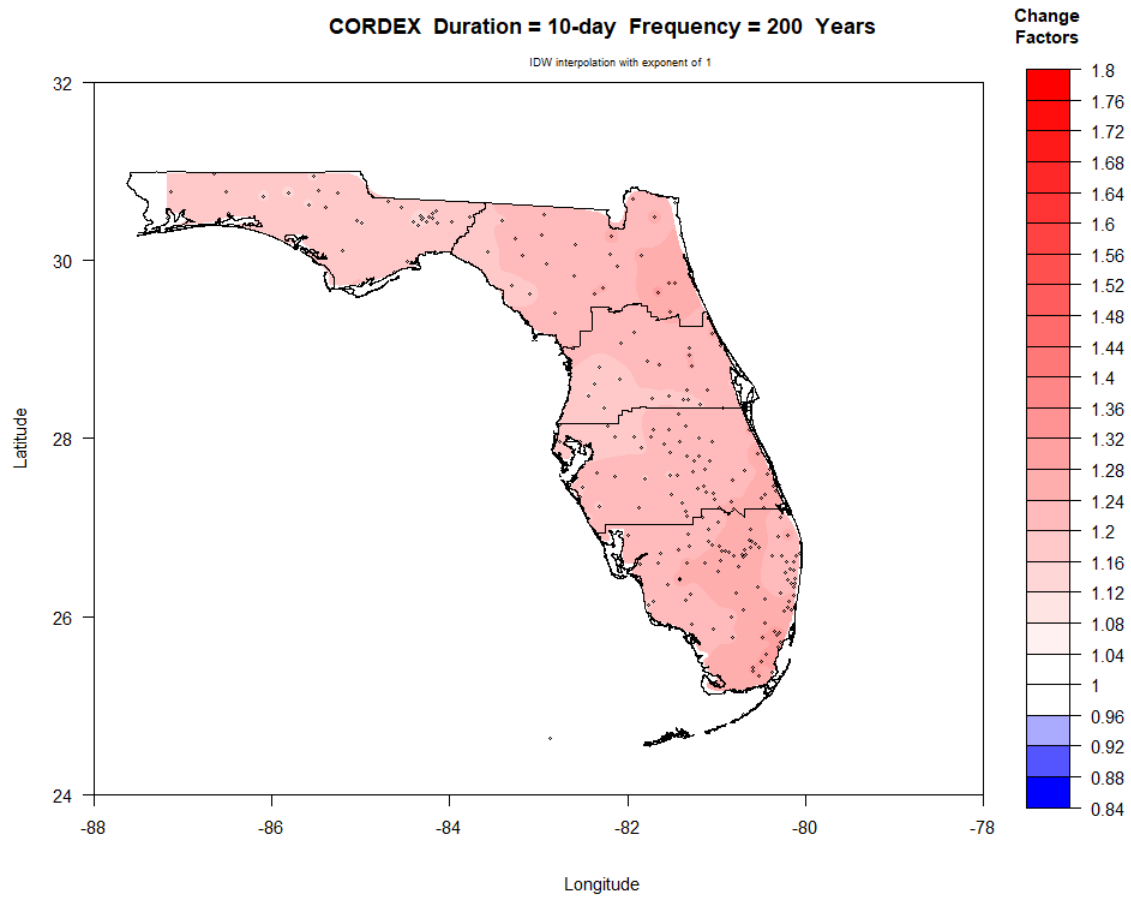


**Figure III-22. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 50-year return period.**

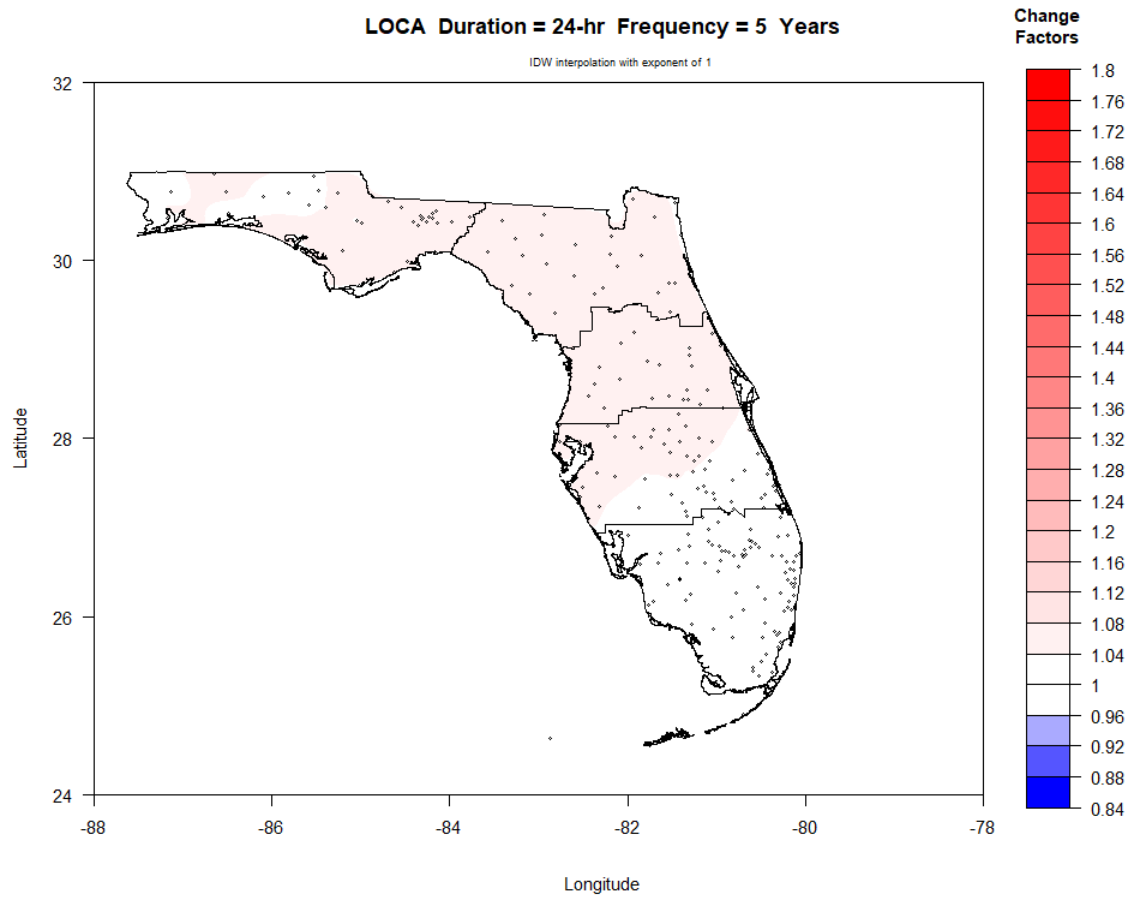




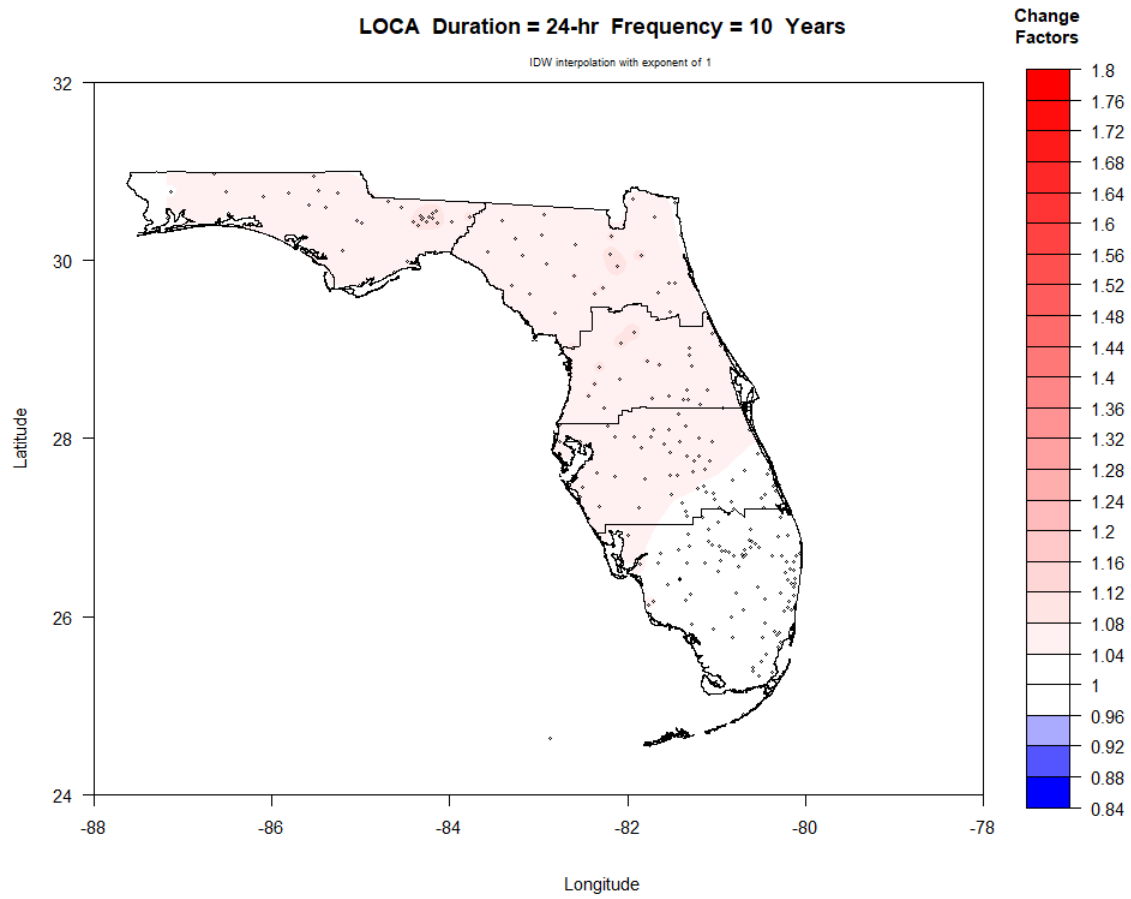
**Figure III-23. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 100-year return period.**



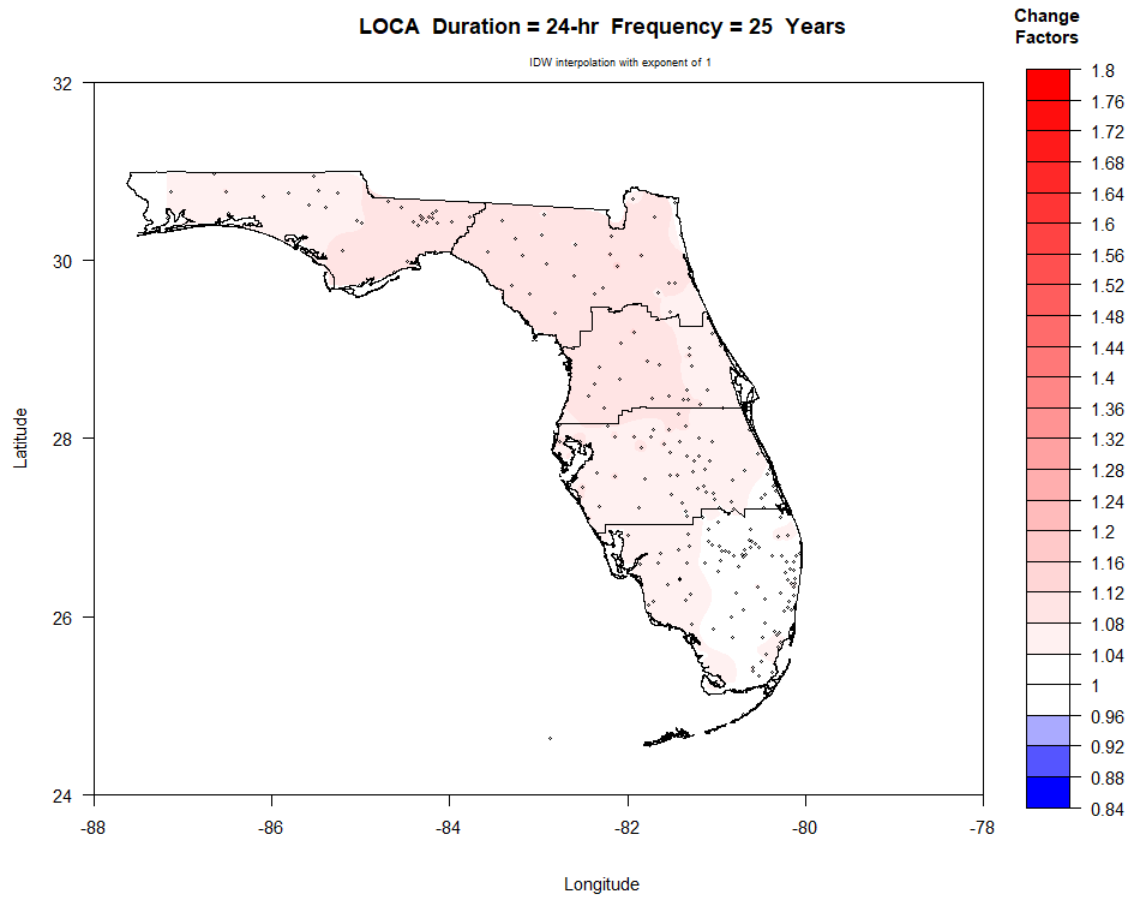
**Figure III-24. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 200-year return period.**



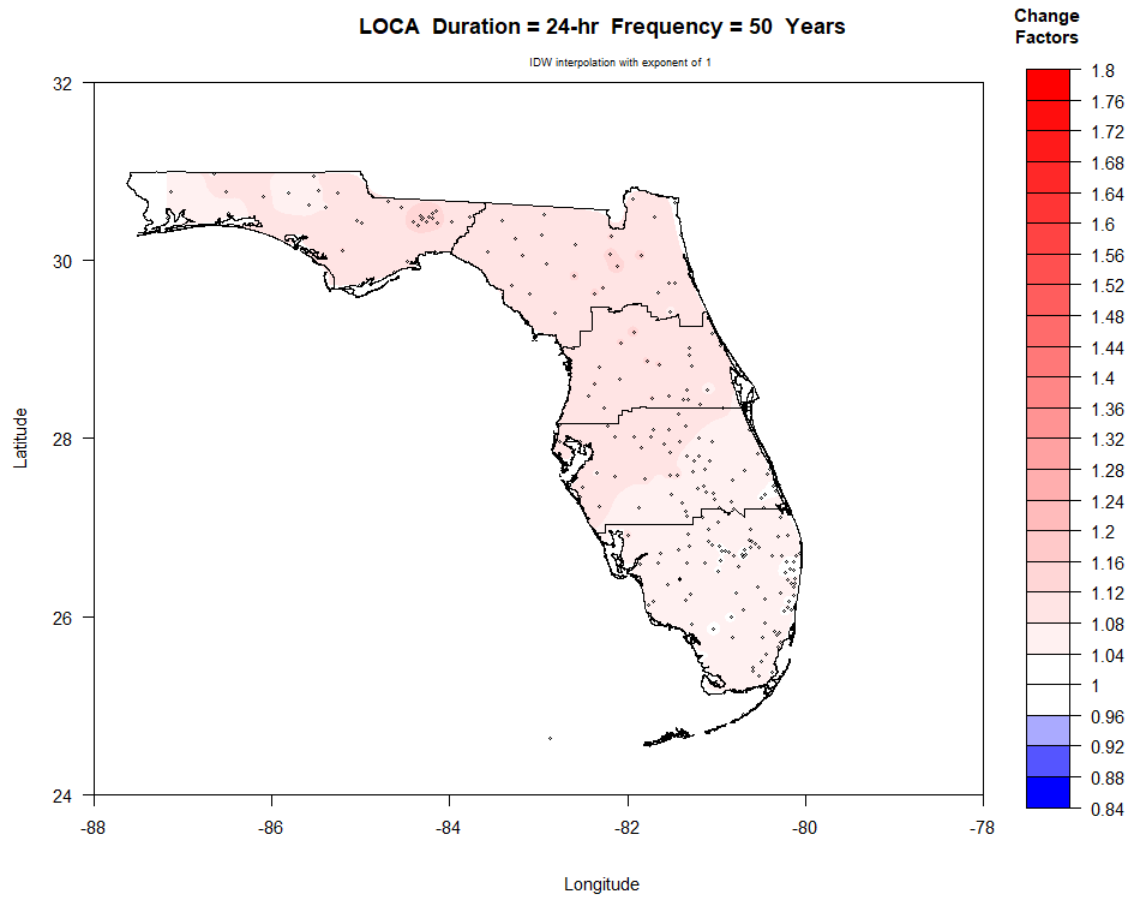
**Figure III-25. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 5-year return period.**



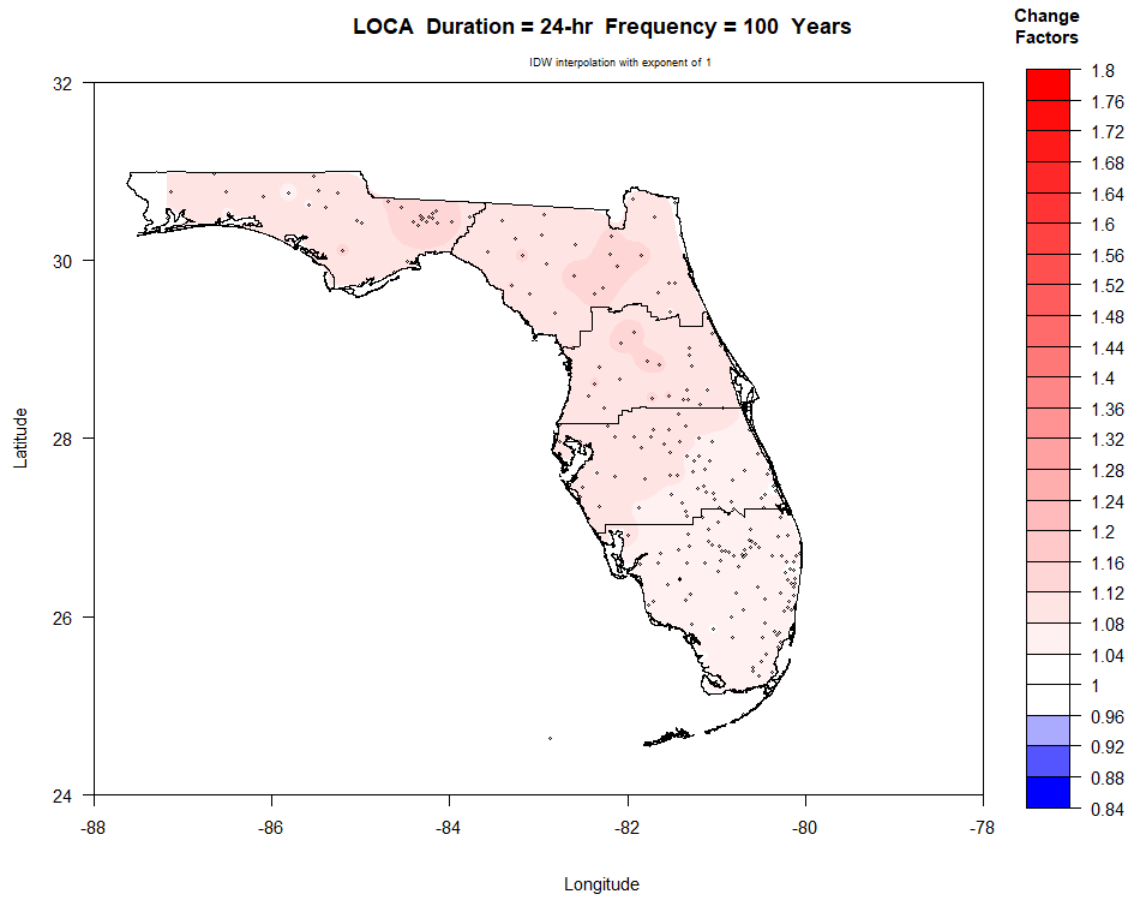
**Figure III-26. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 10-year return period.**



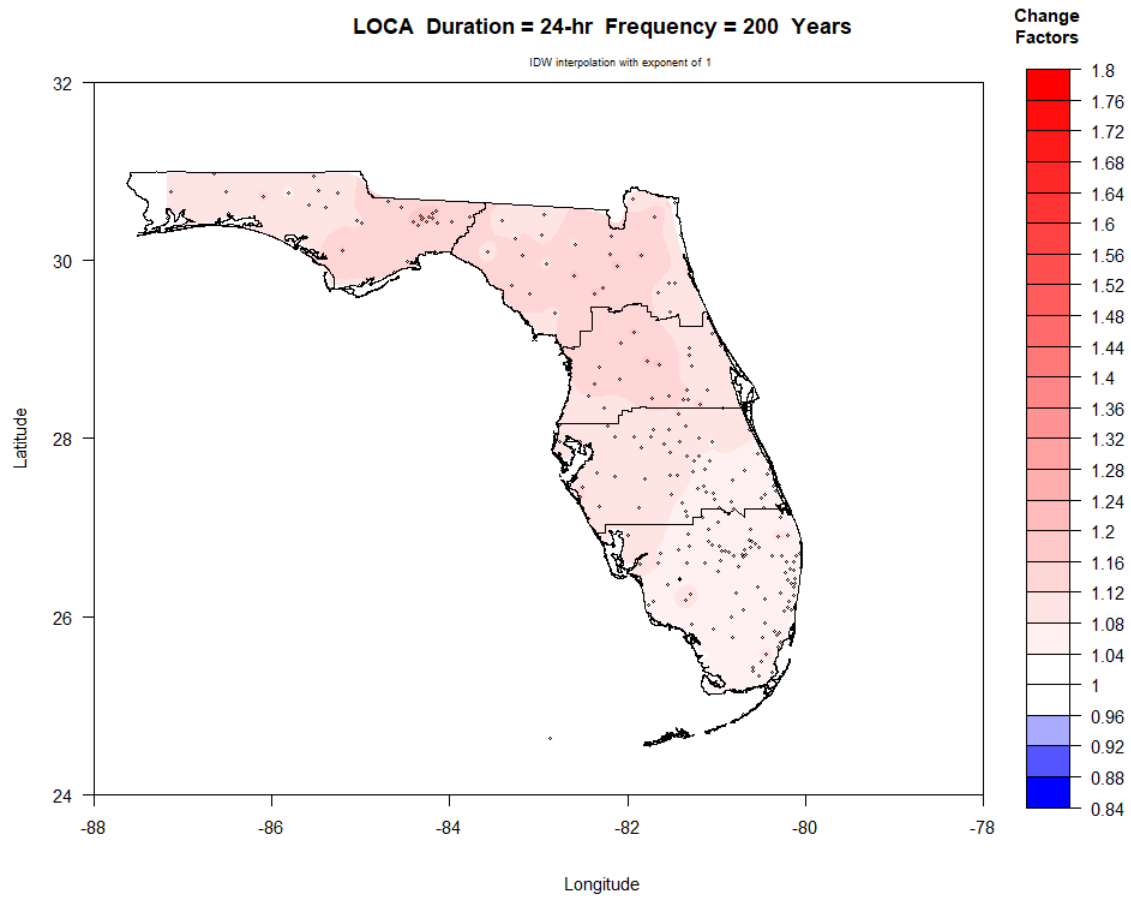
**Figure III-27. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 25-year return period.**



**Figure III-28. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 50-year return period.**

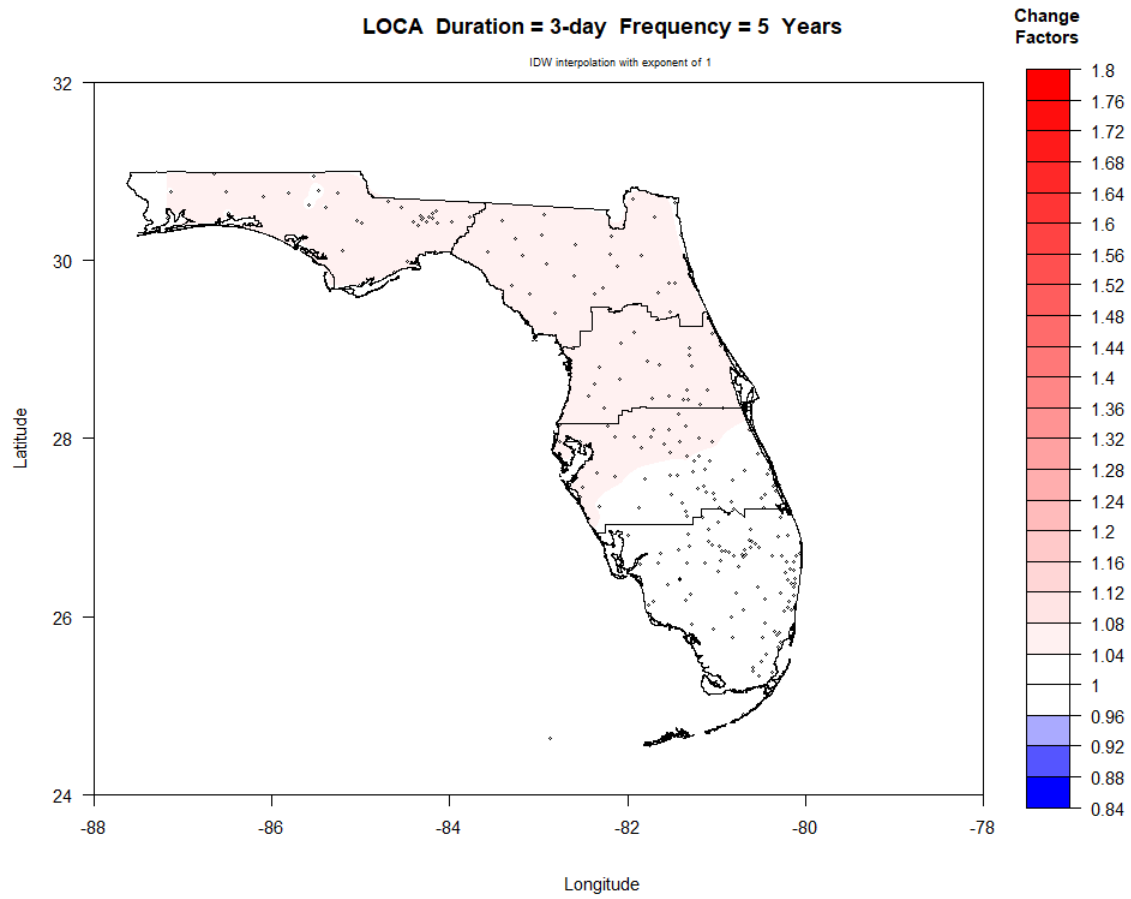


**Figure III-29. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 100-year return period.**

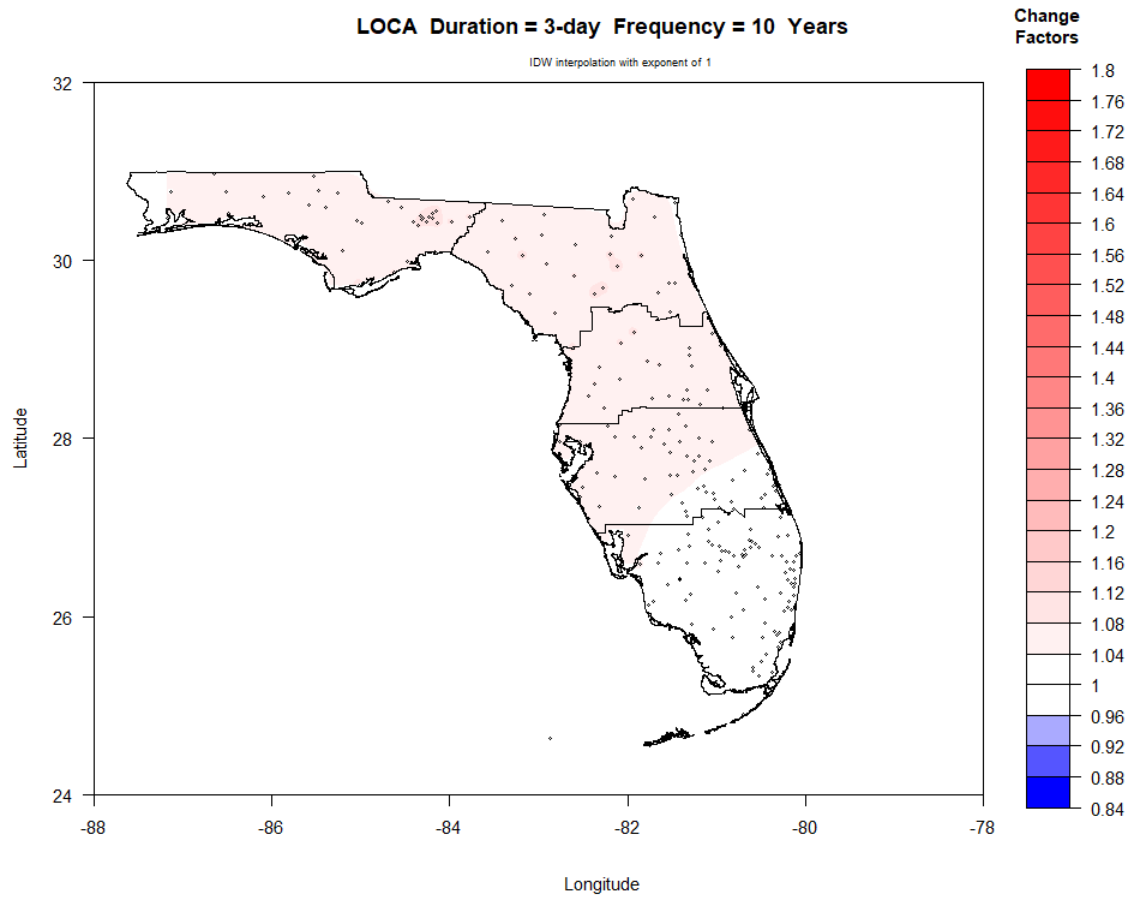


**Figure III-30. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 200-year return period.**

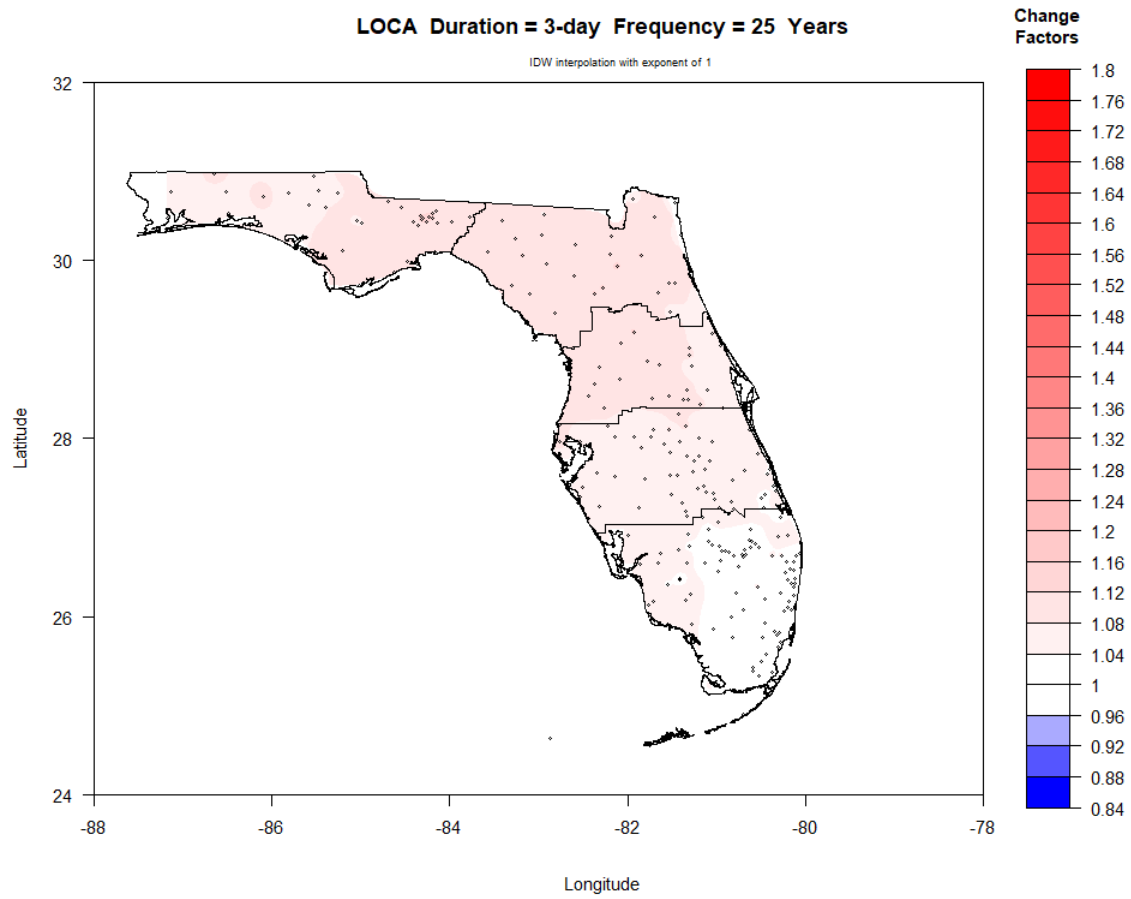




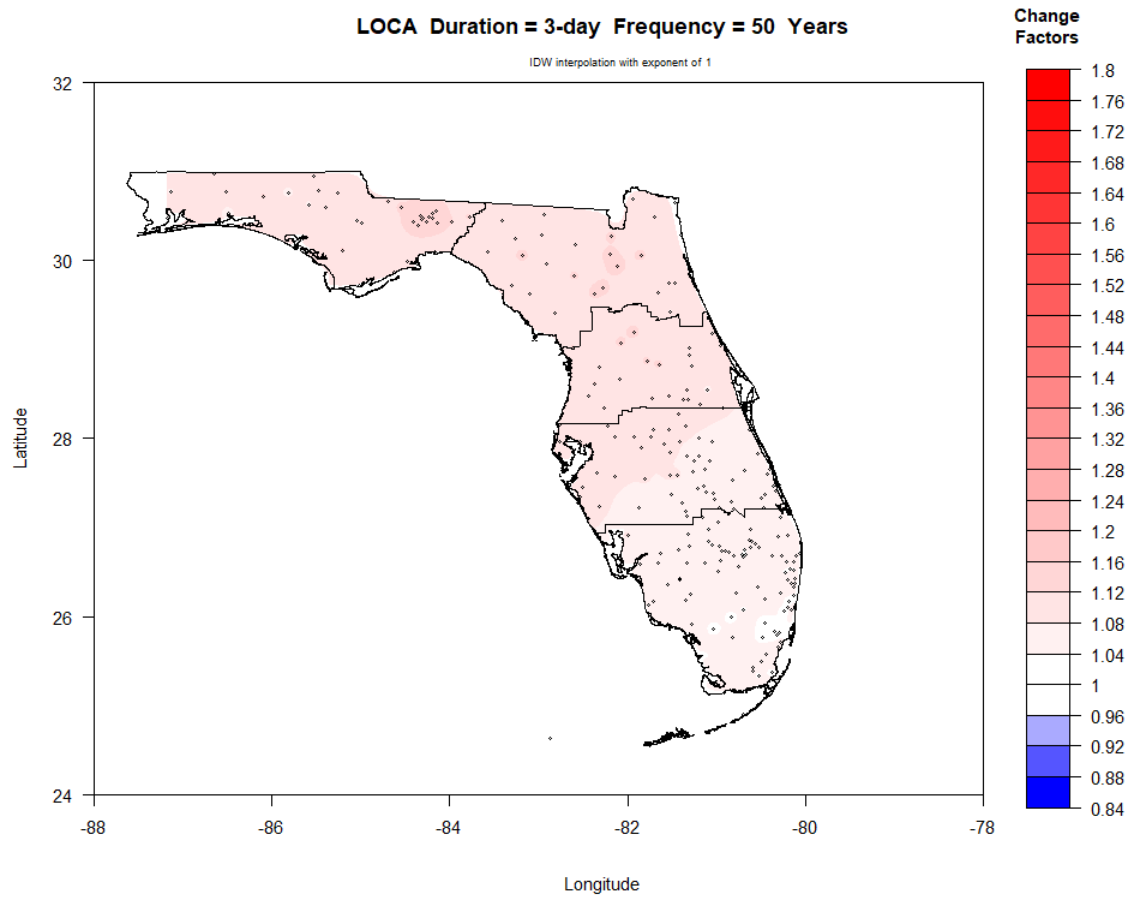
**Figure III-31. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 5-year return period.**



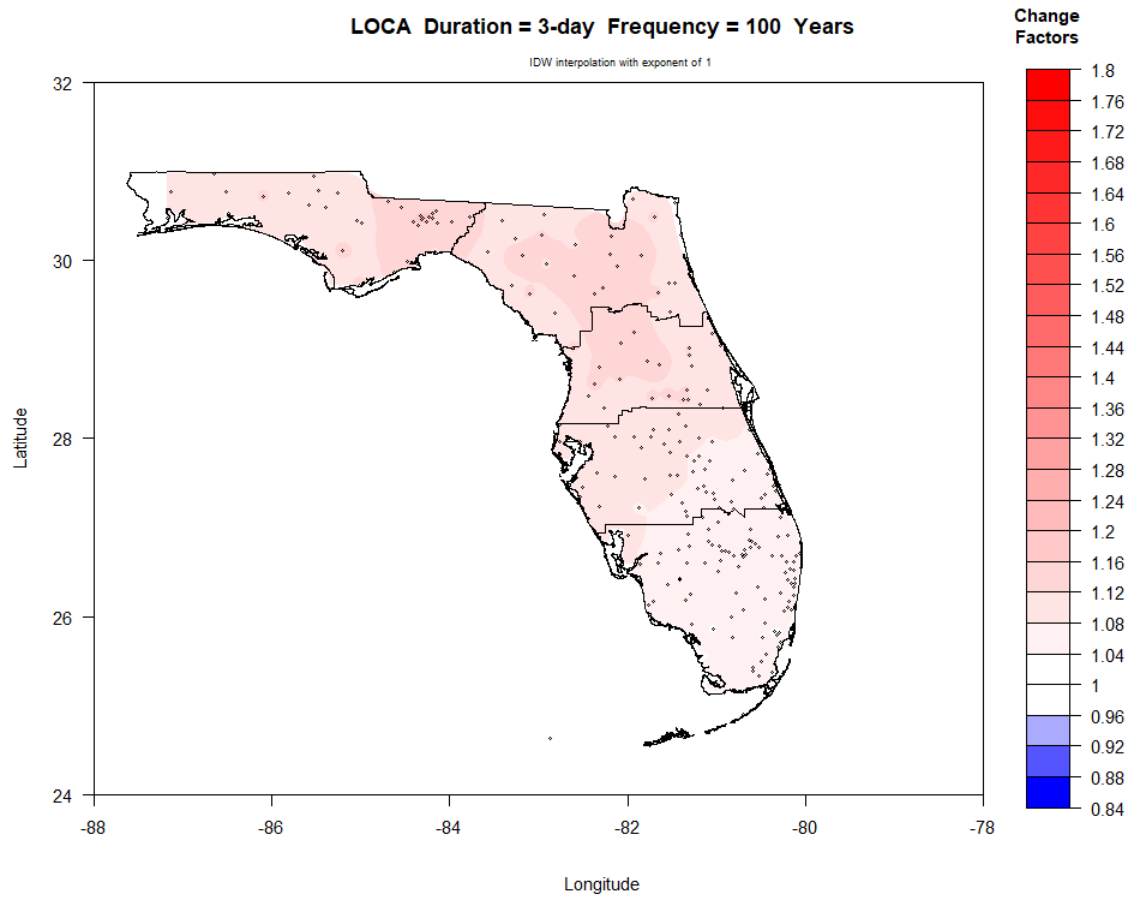
**Figure III-32. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 10-year return period.**



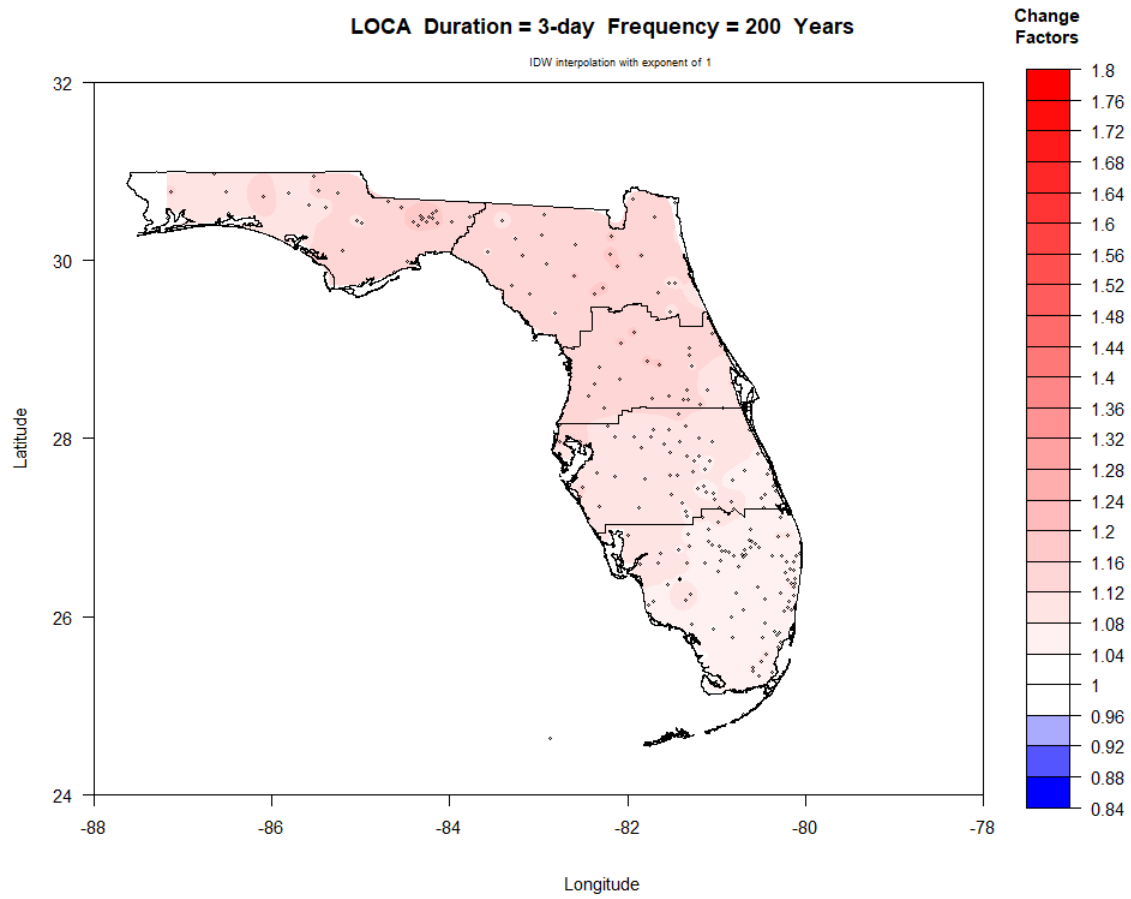
**Figure III-33. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 25-year return period.**



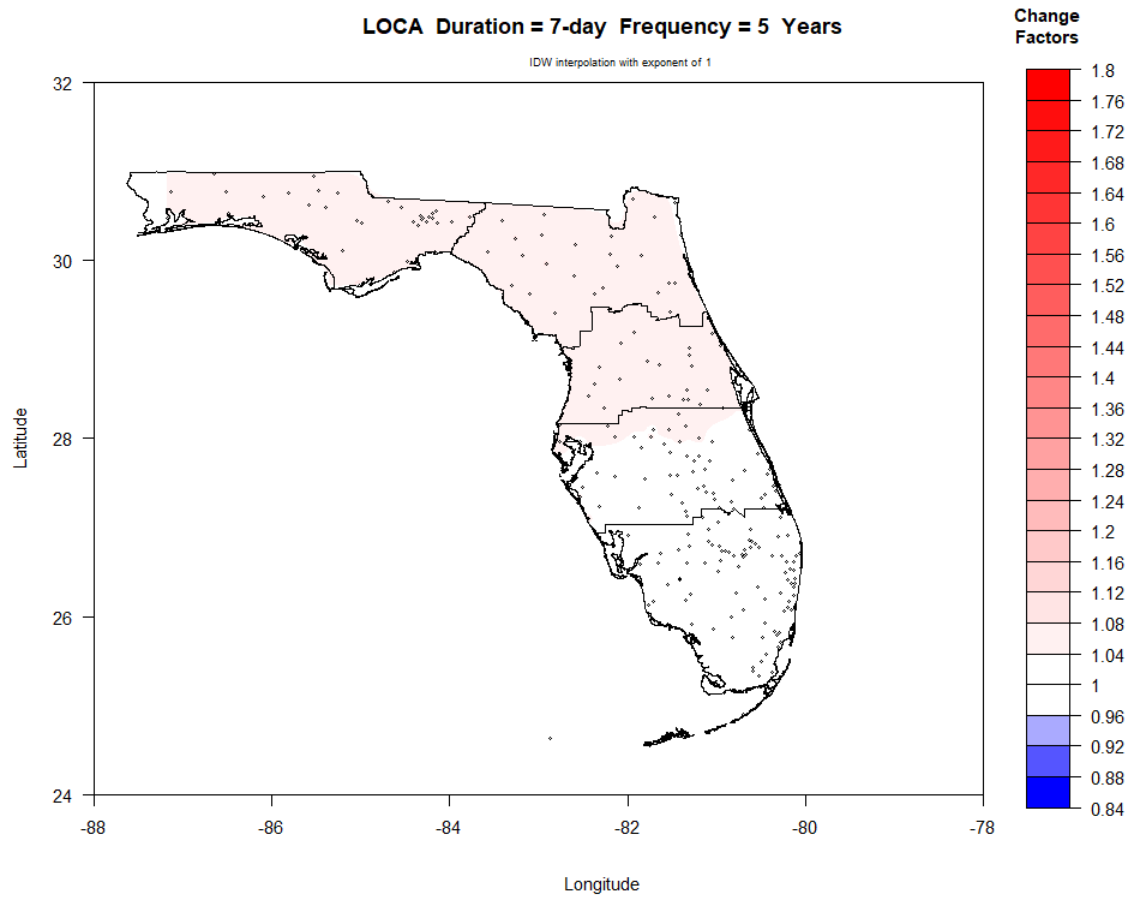
**Figure III-34. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 50-year return period.**



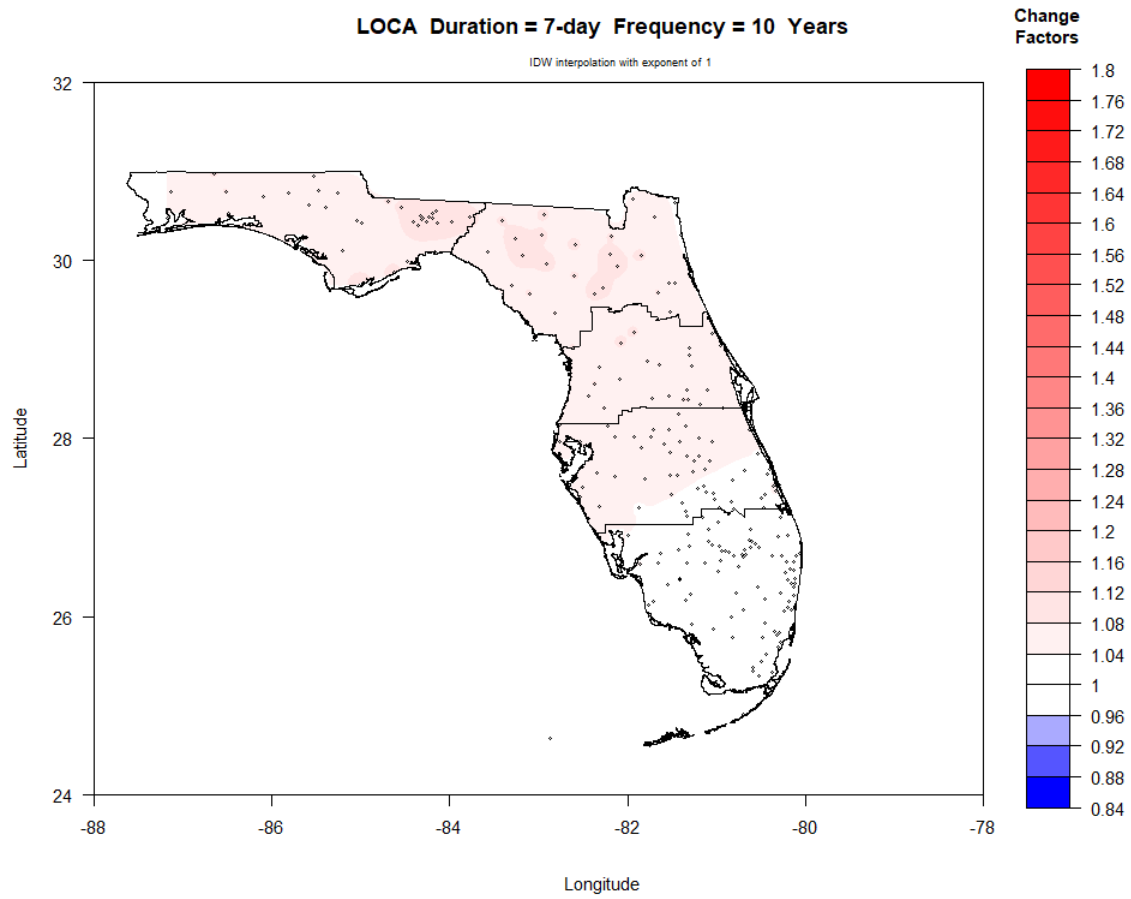
**Figure III-35. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 100-year return period.**



**Figure III-36. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 200-year return period.**

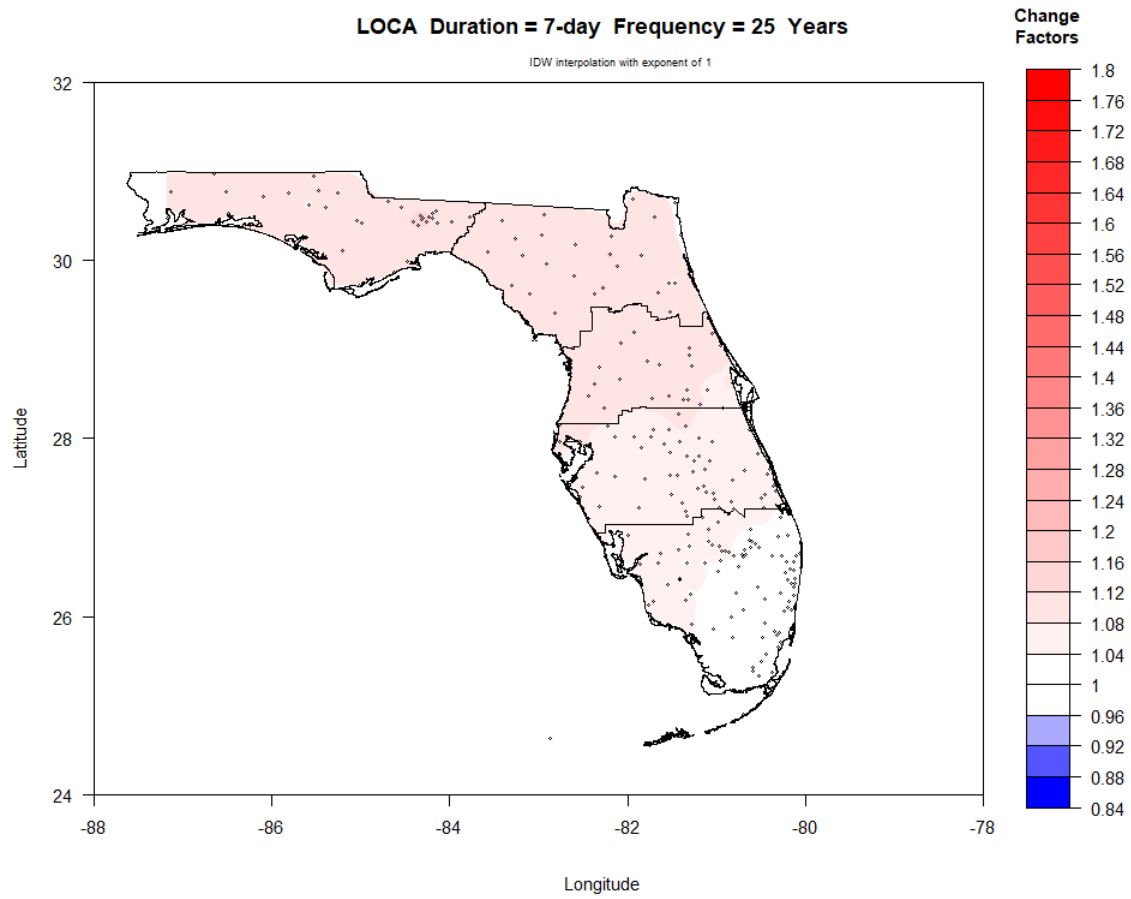


**Figure III-37. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 5-year return period.**

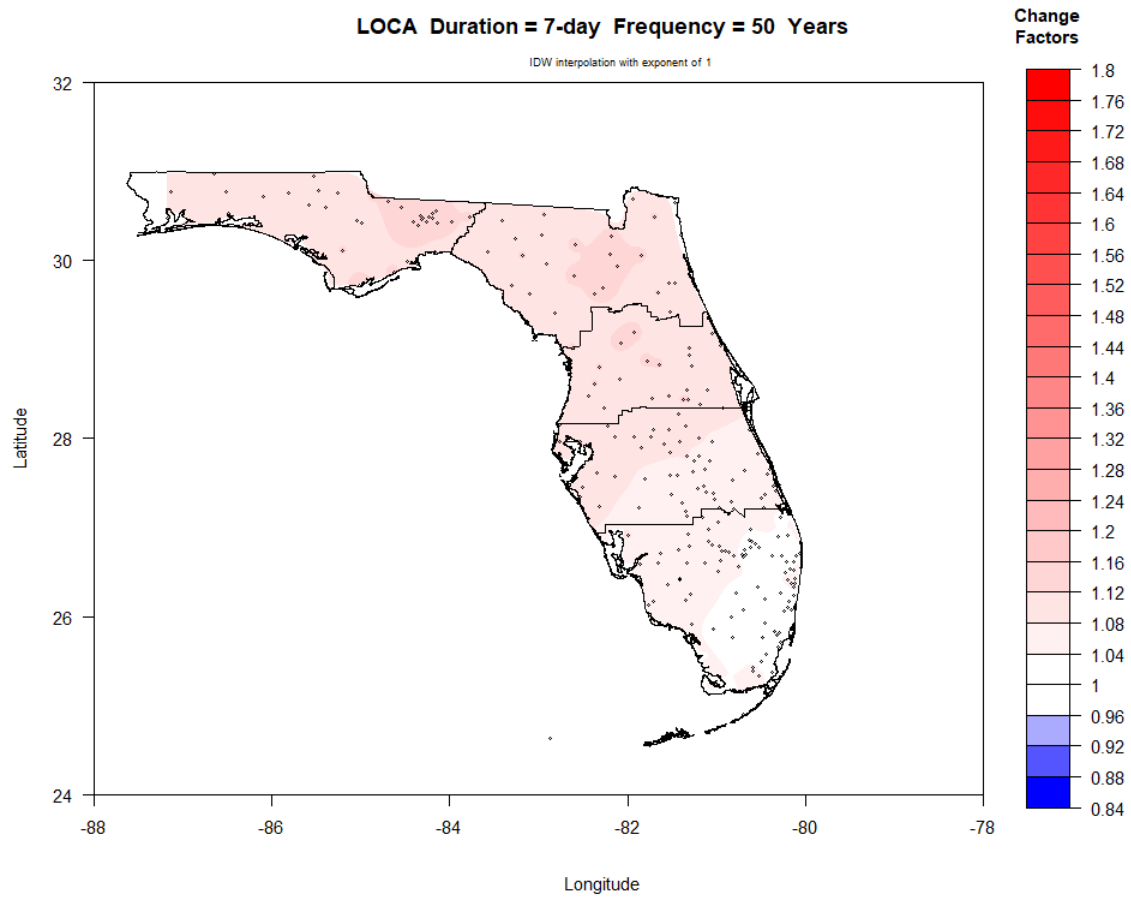


**Figure III-38. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 10-year return period.**

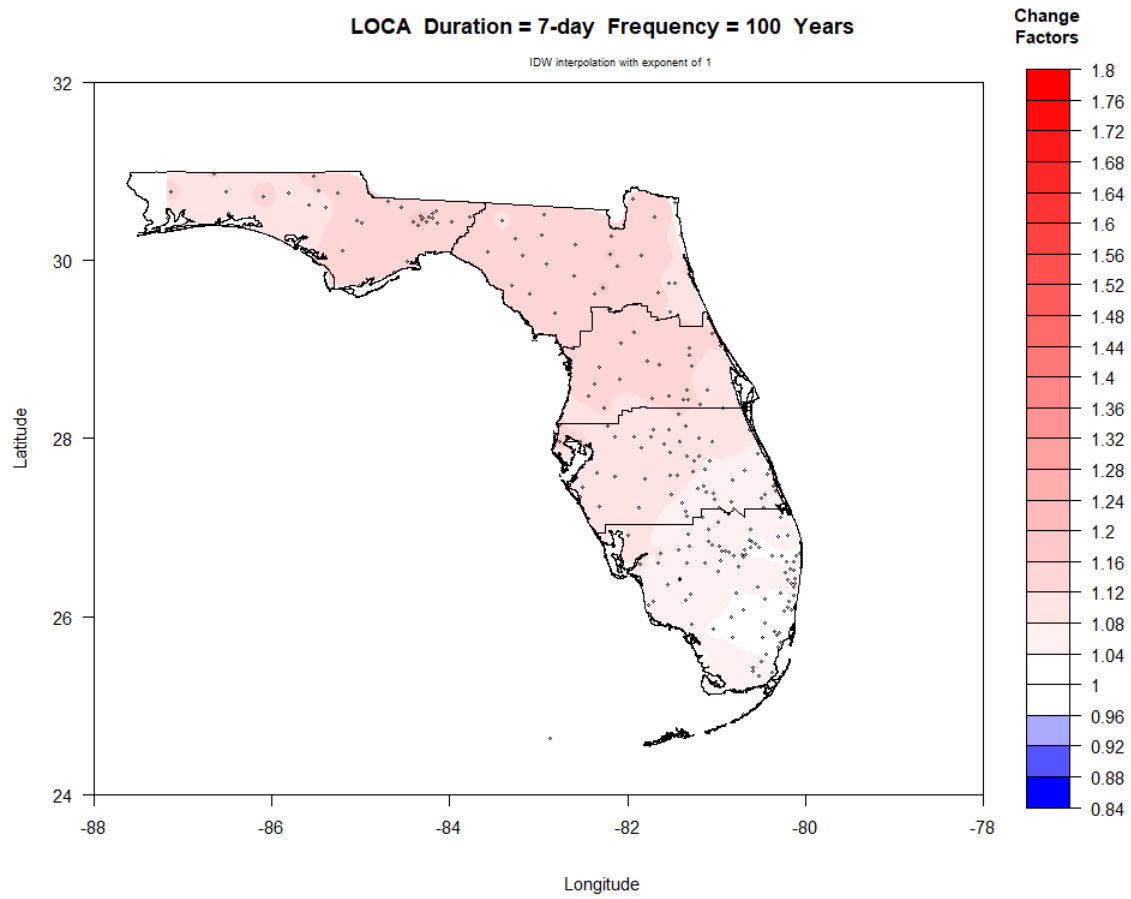




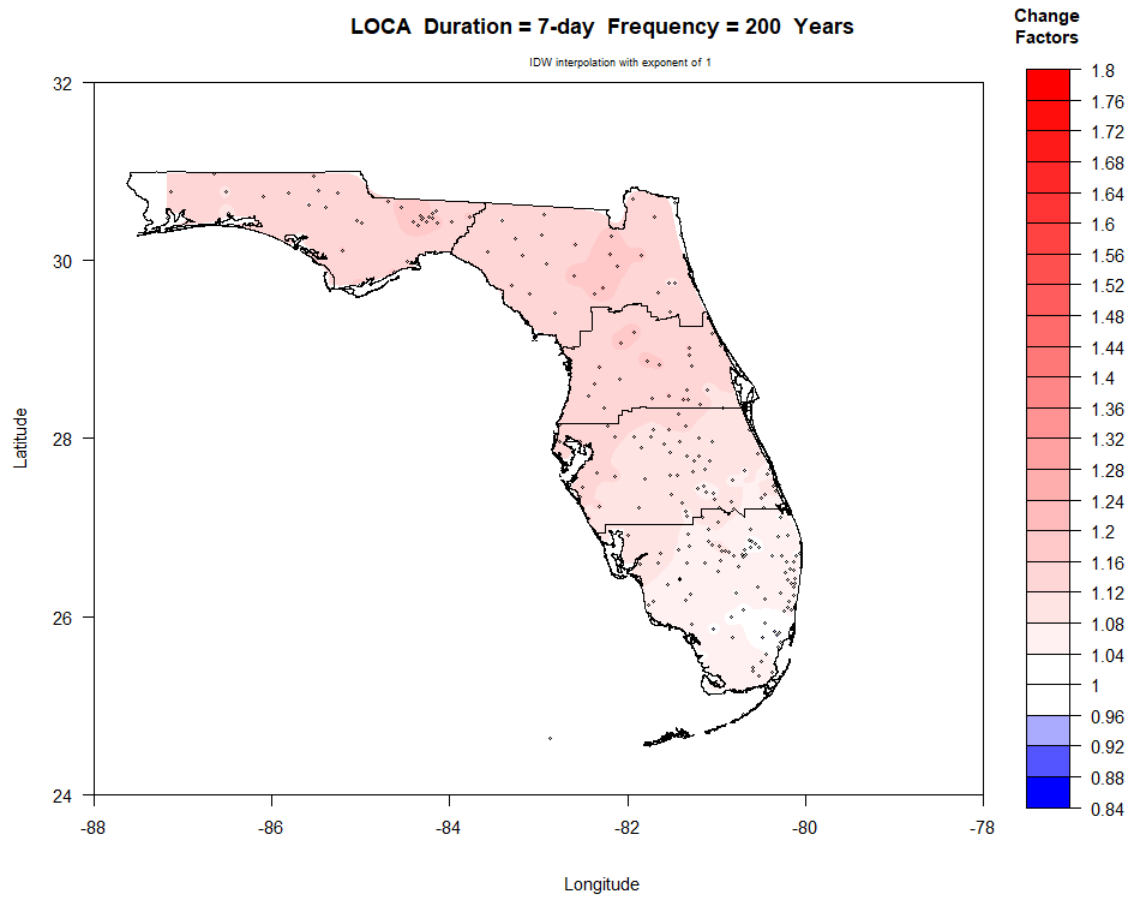
**Figure III-39. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 25-year return period.**



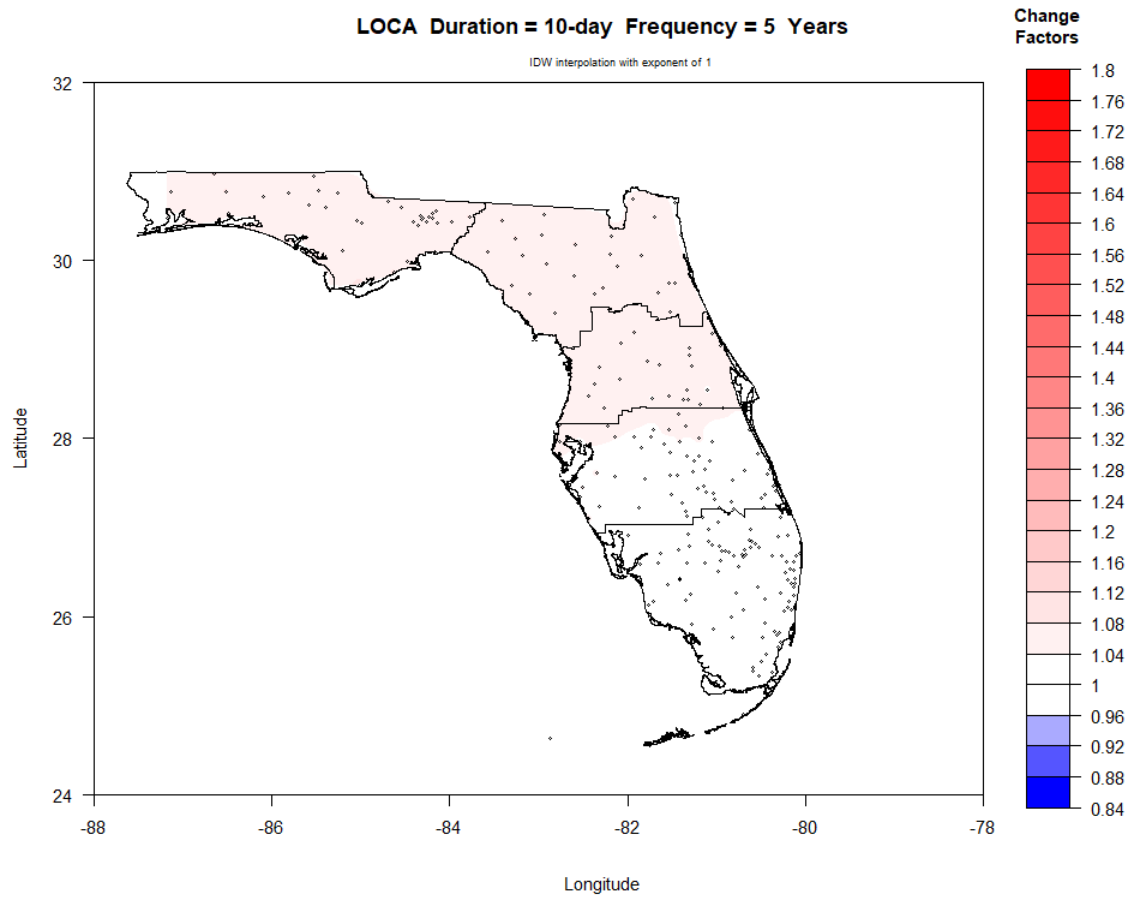
**Figure III-40. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 50-year return period.**



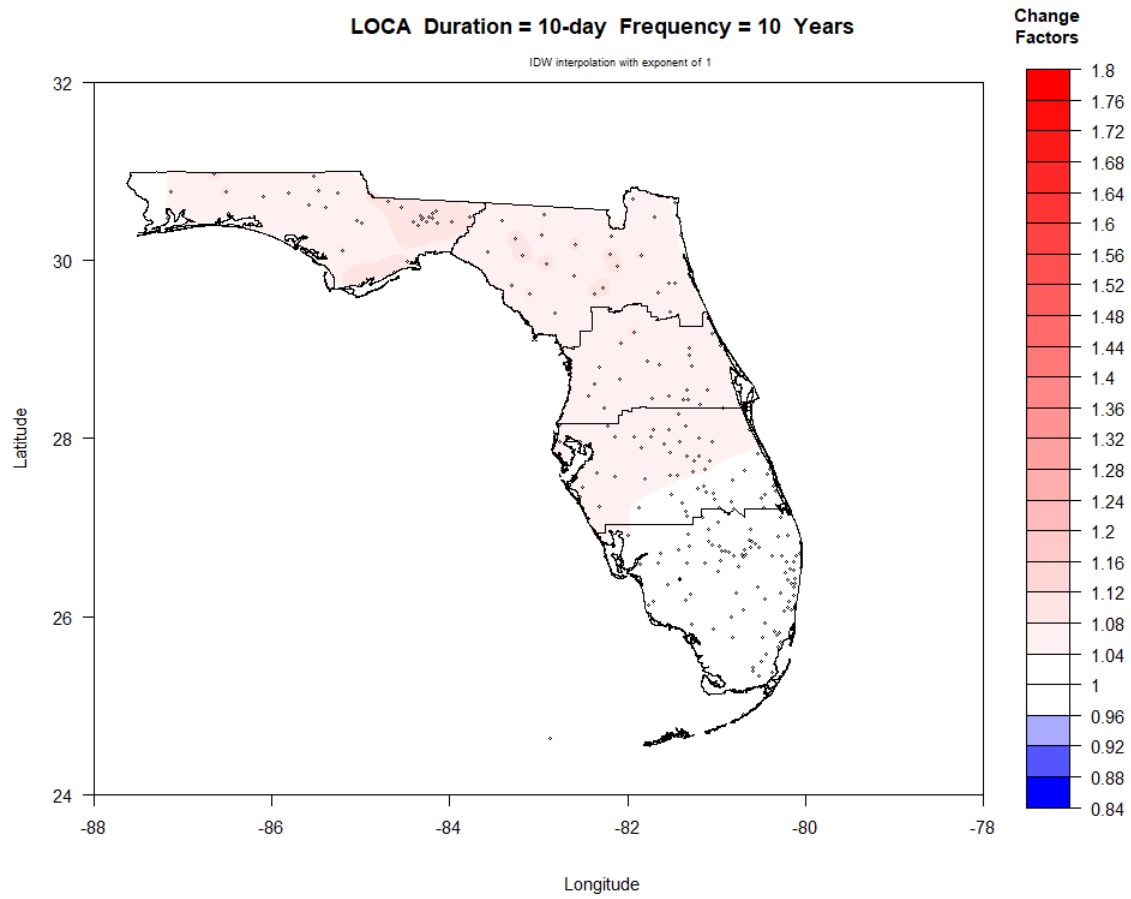
**Figure III-41. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 100-year return period.**



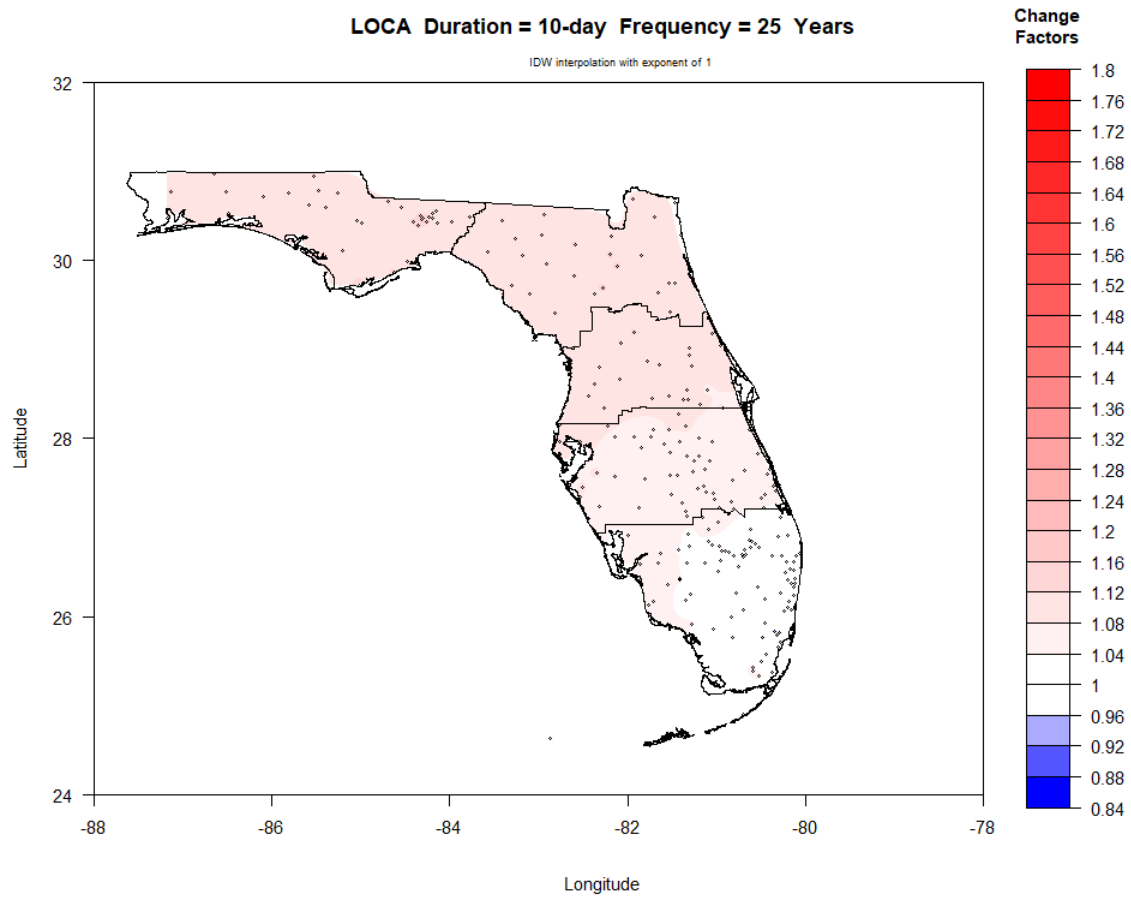
**Figure III-42. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 200-year return period.**



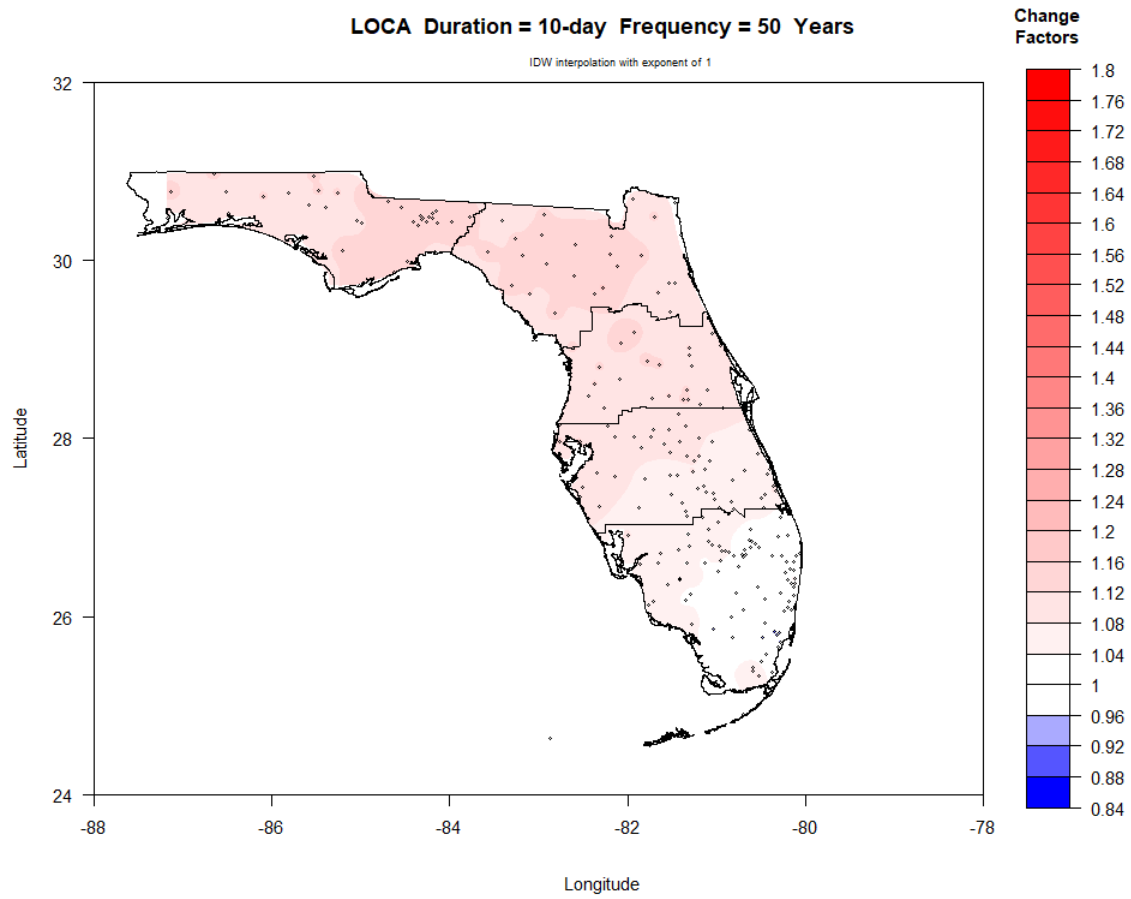
**Figure III-43. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 5-year return period.**



**Figure III-44. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 10-year return period.**

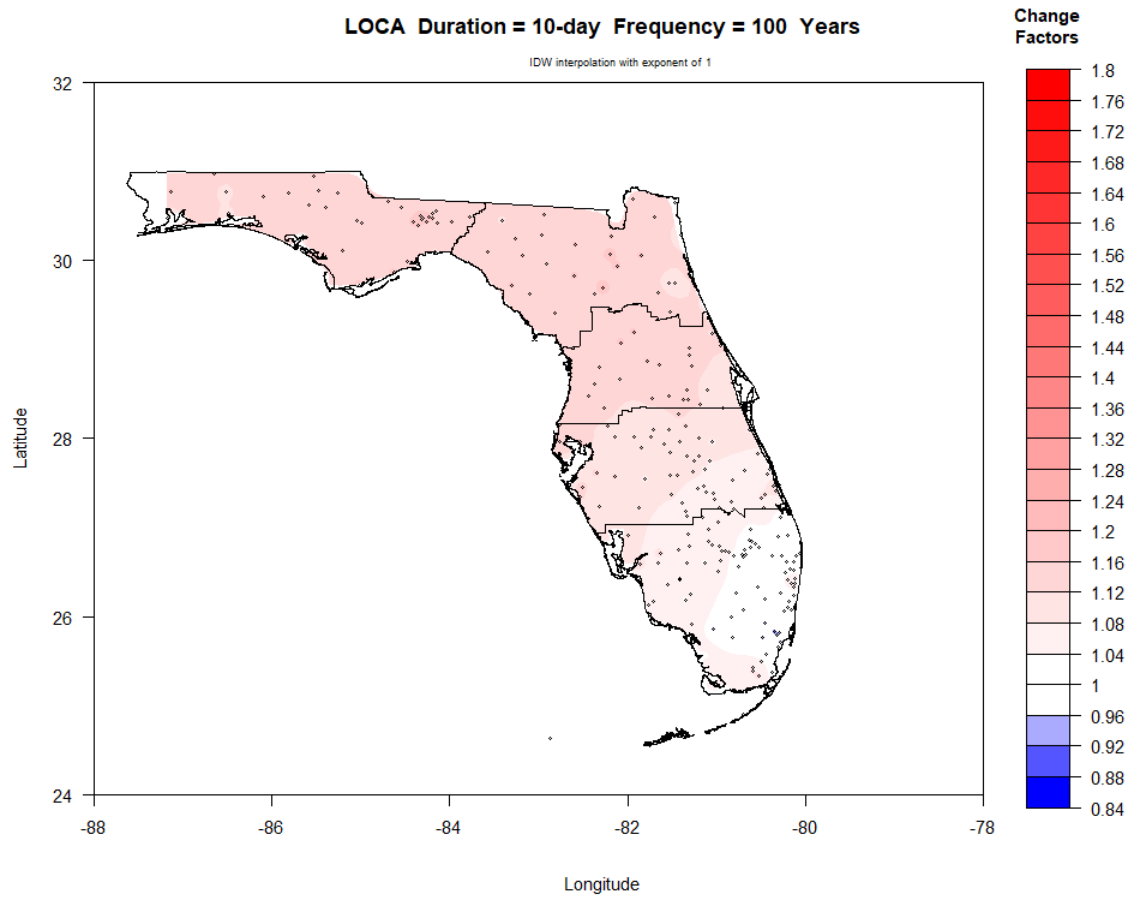


**Figure III-45. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 25-year return period.**

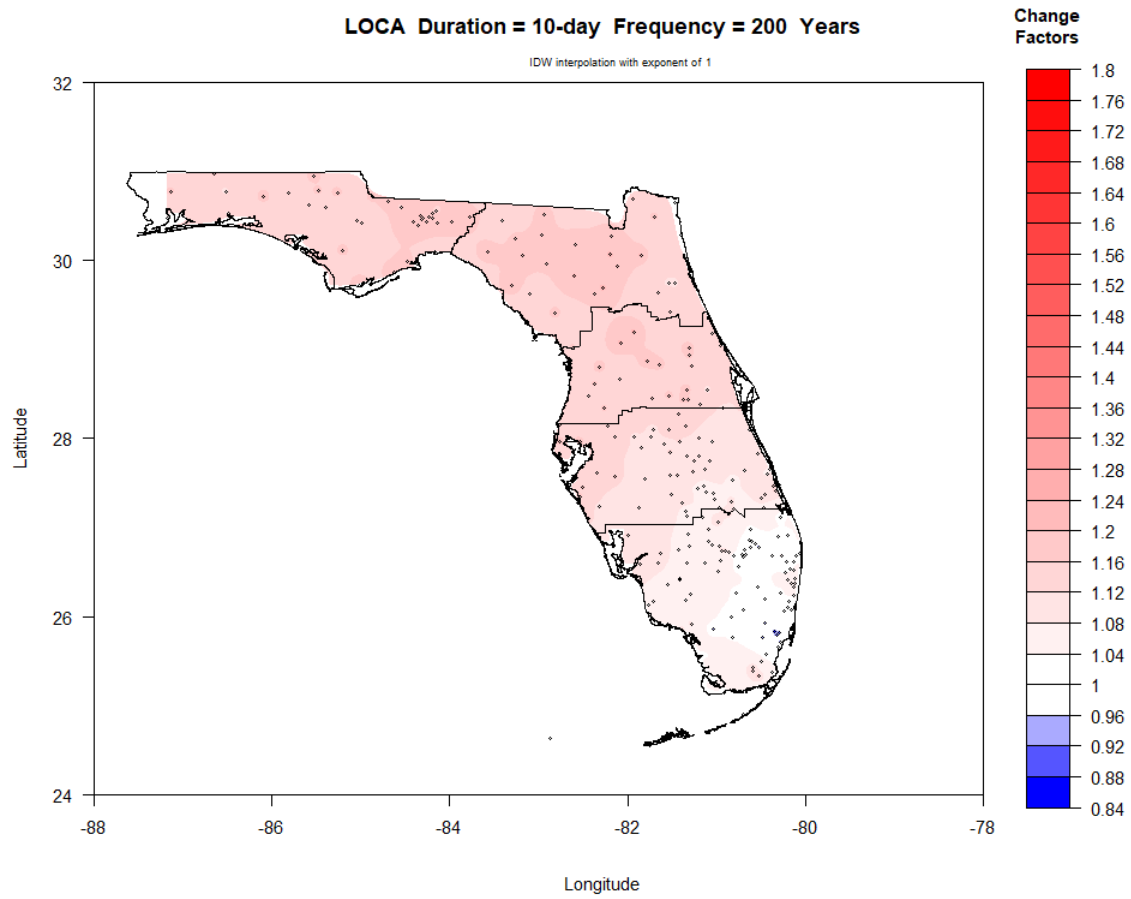


**Figure III-46. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 50-year return period.**

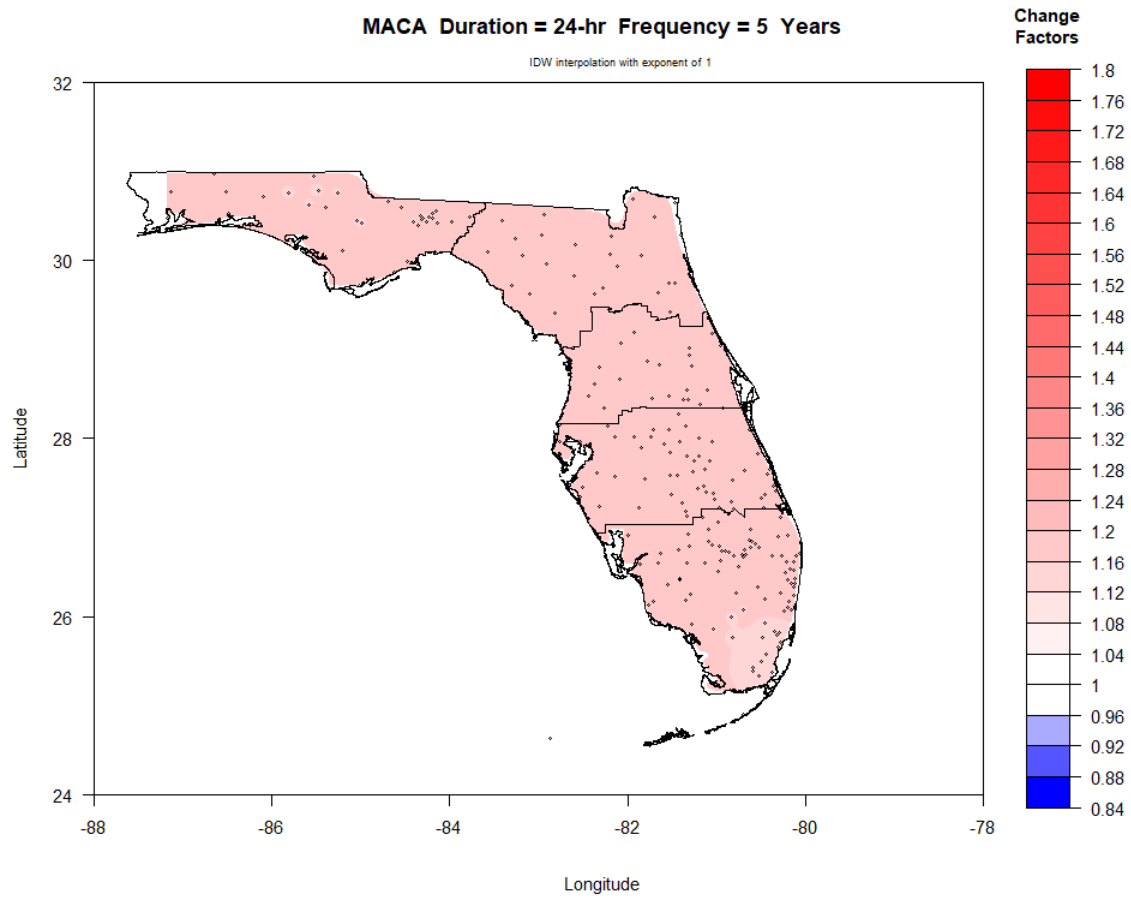




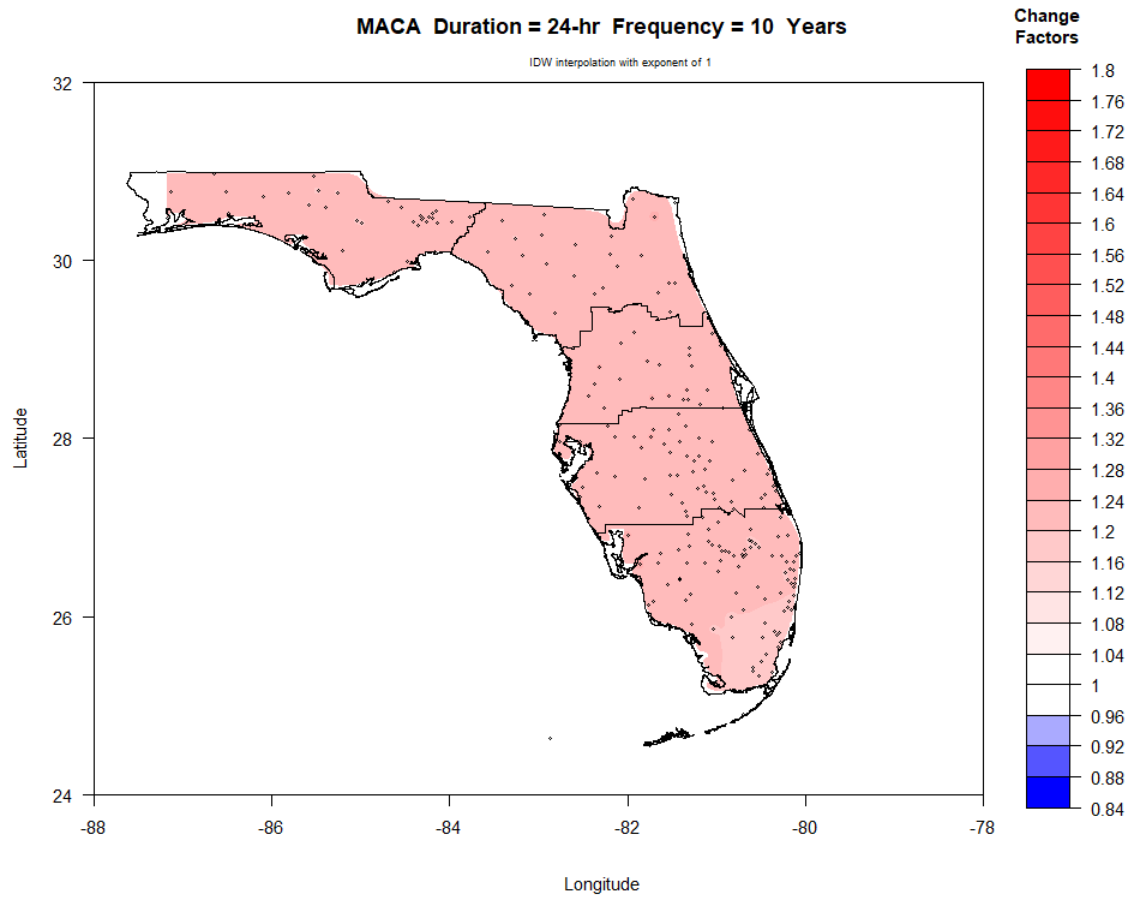
**Figure III-47. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 100-year return period.**



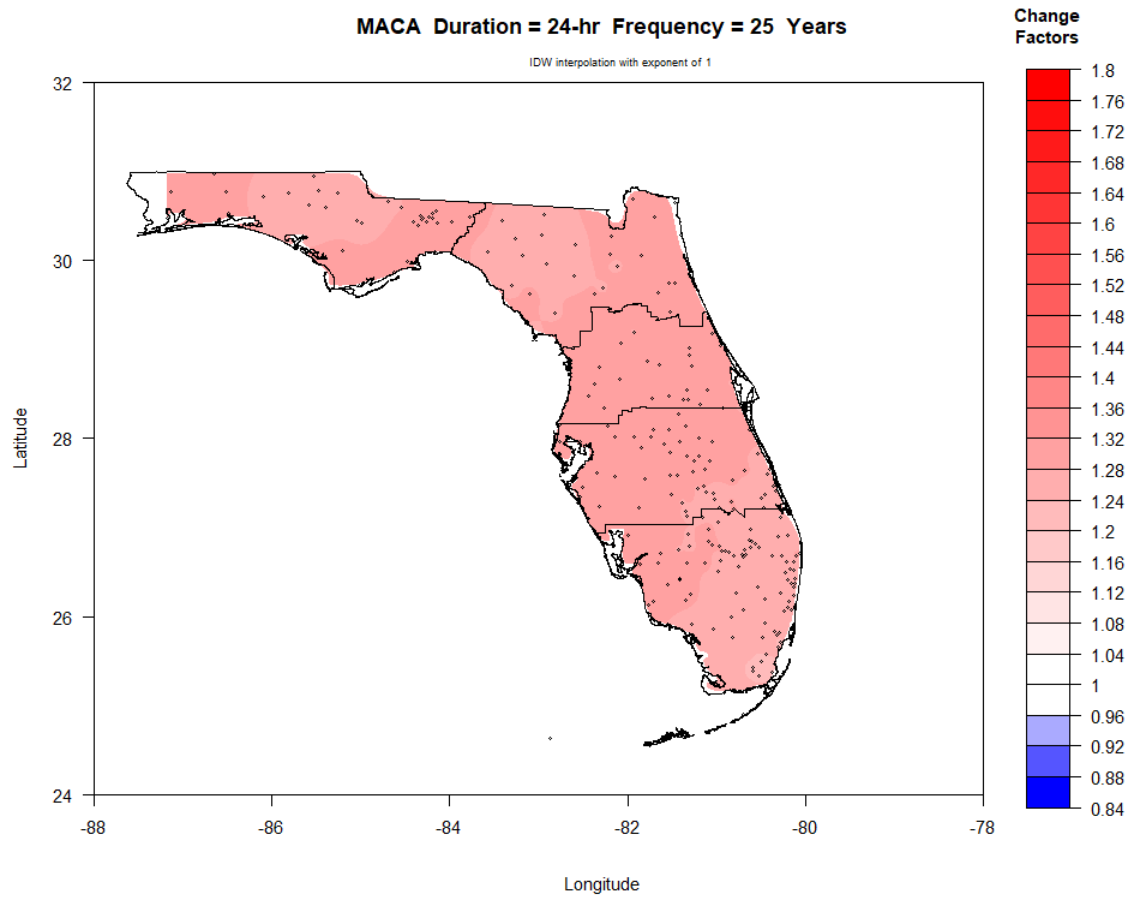
**Figure III-48. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 200-year return period.**



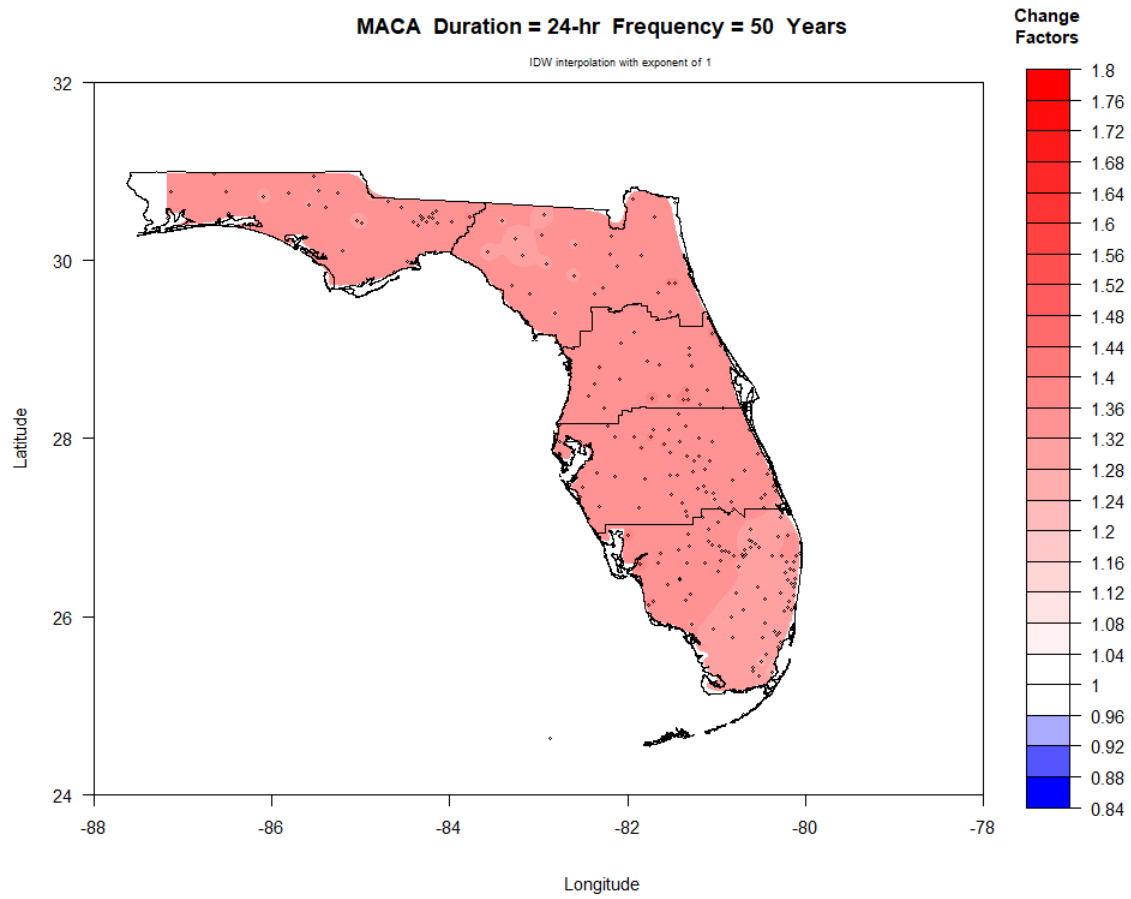
**Figure III-49. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 5-year return period.**



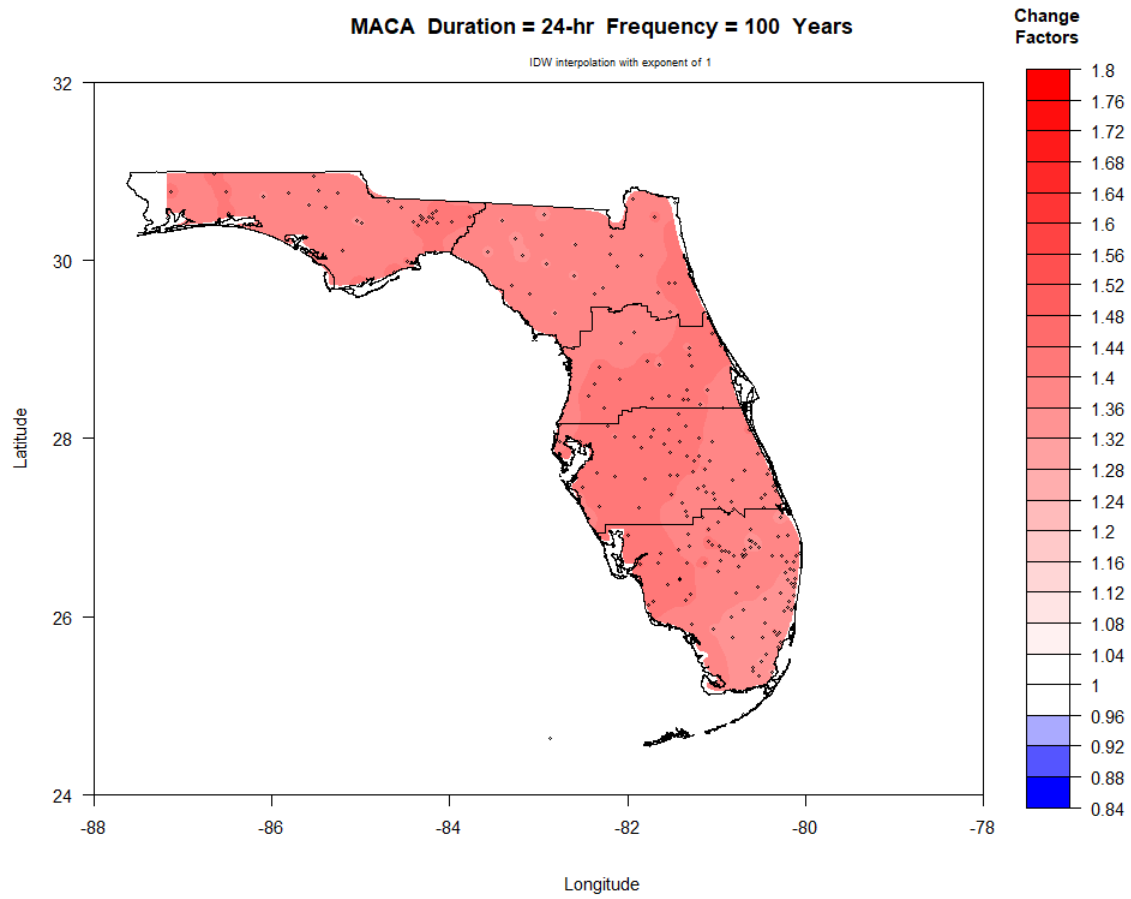
**Figure III-50. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 10-year return period.**



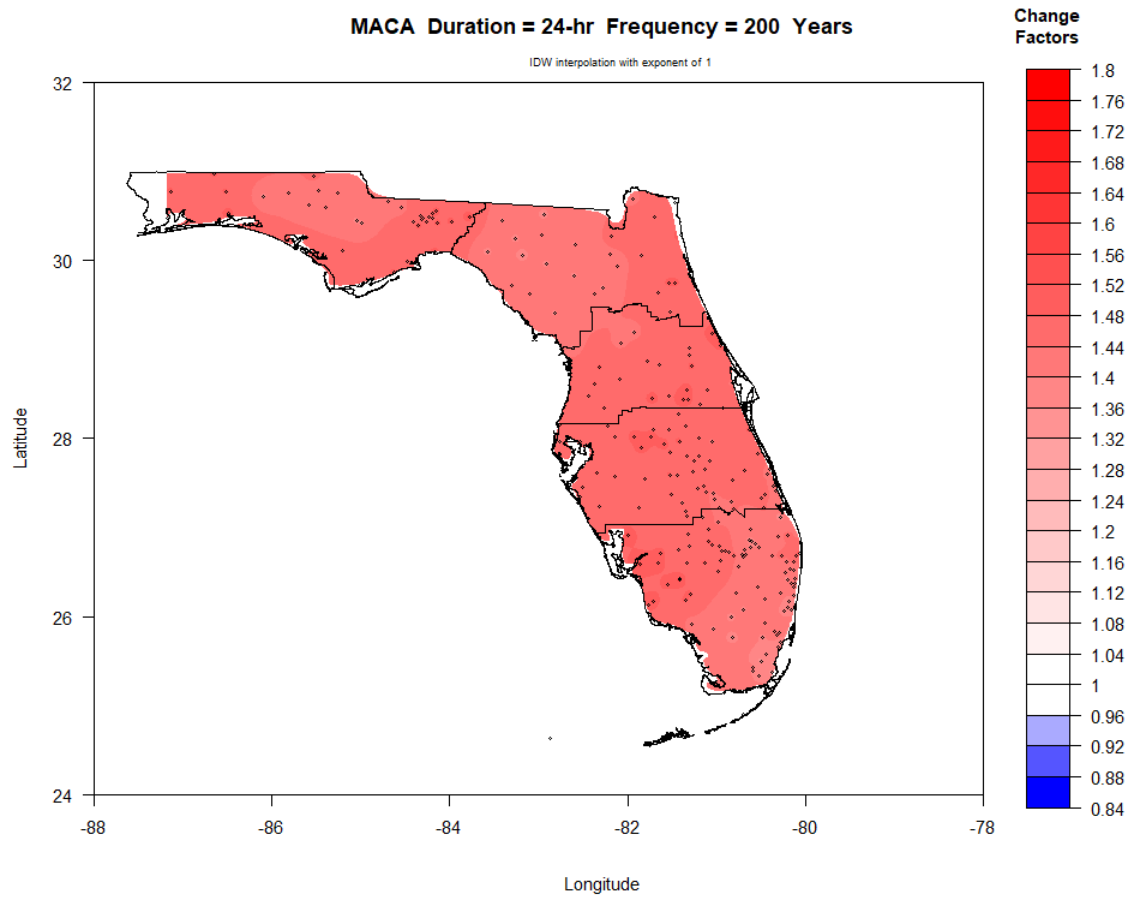
**Figure III-51. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 25-year return period.**



**Figure III-52. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 50-year return period.**

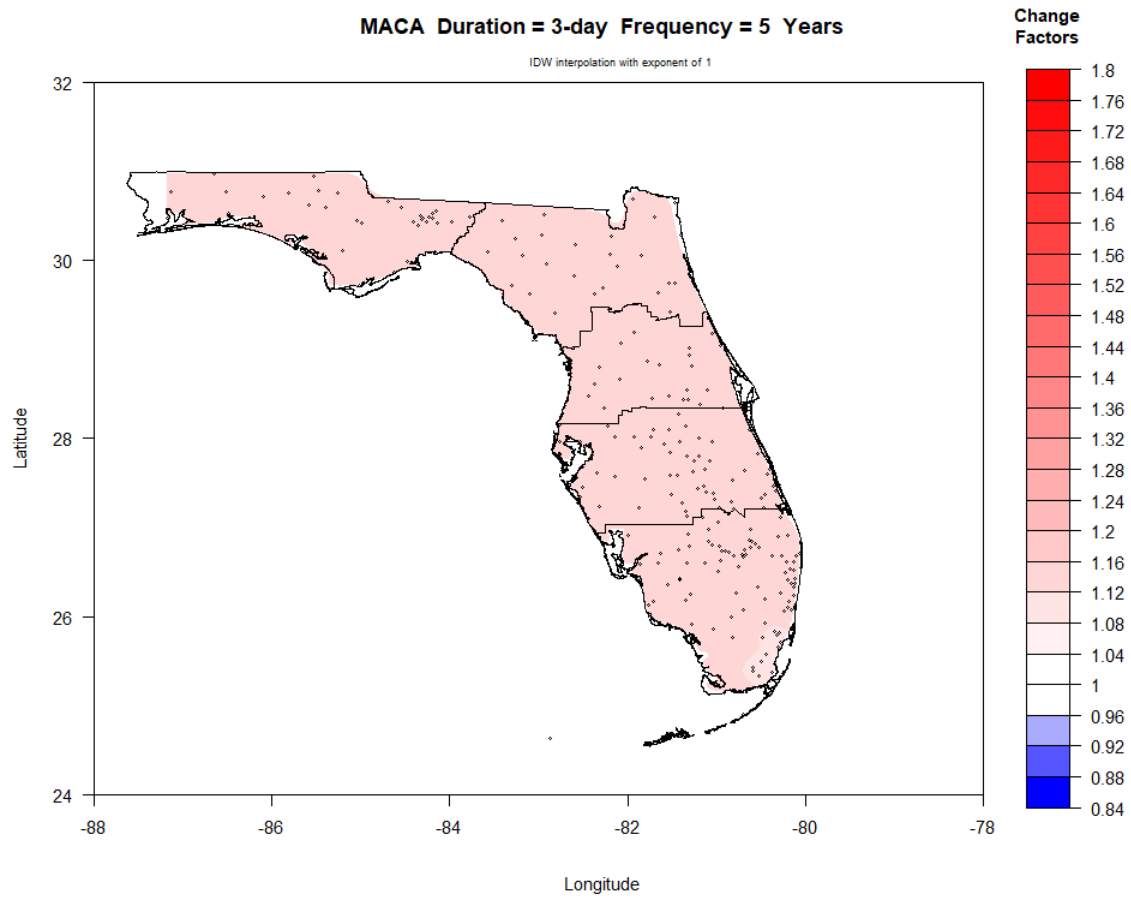


**Figure III-53. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 100-year return period.**

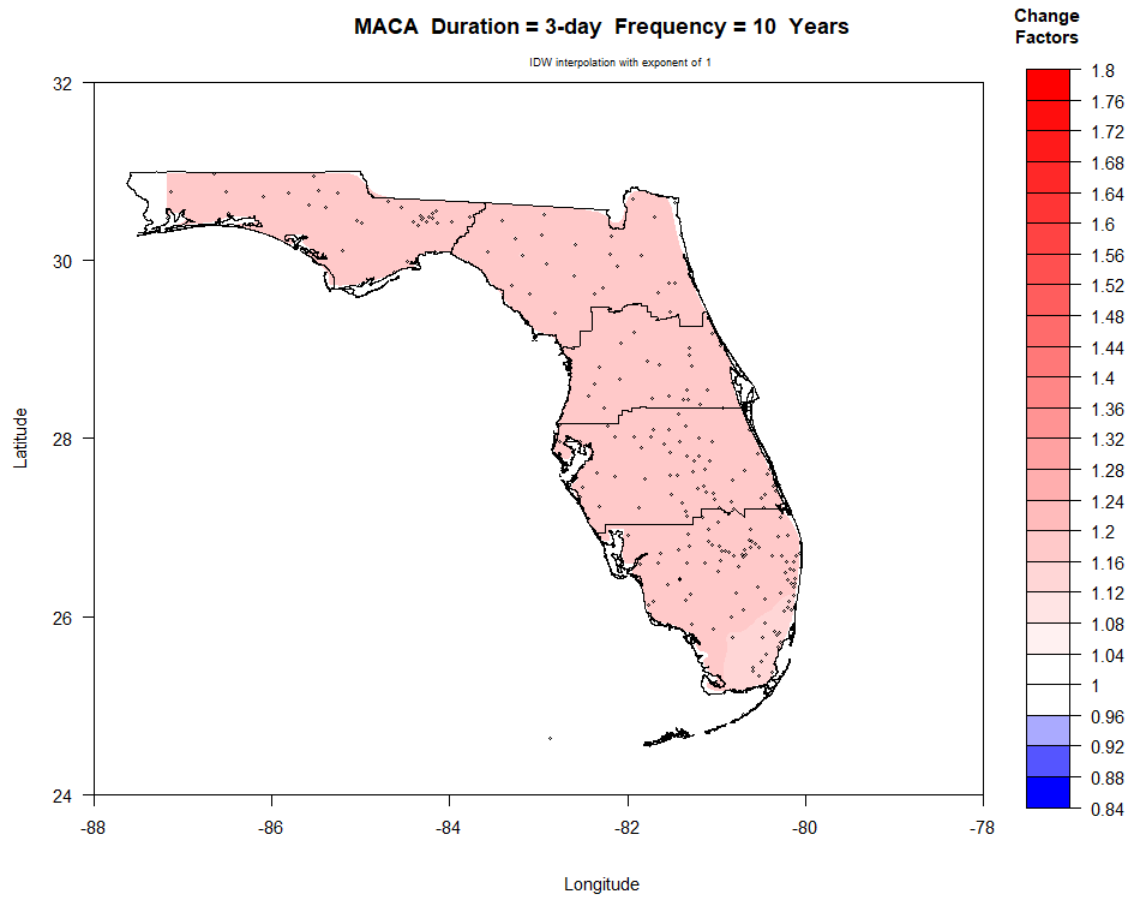


**Figure III-54. Map of NEAR period (2030-2069) change factors across Florida for 24-hr duration and 200-year return period.**

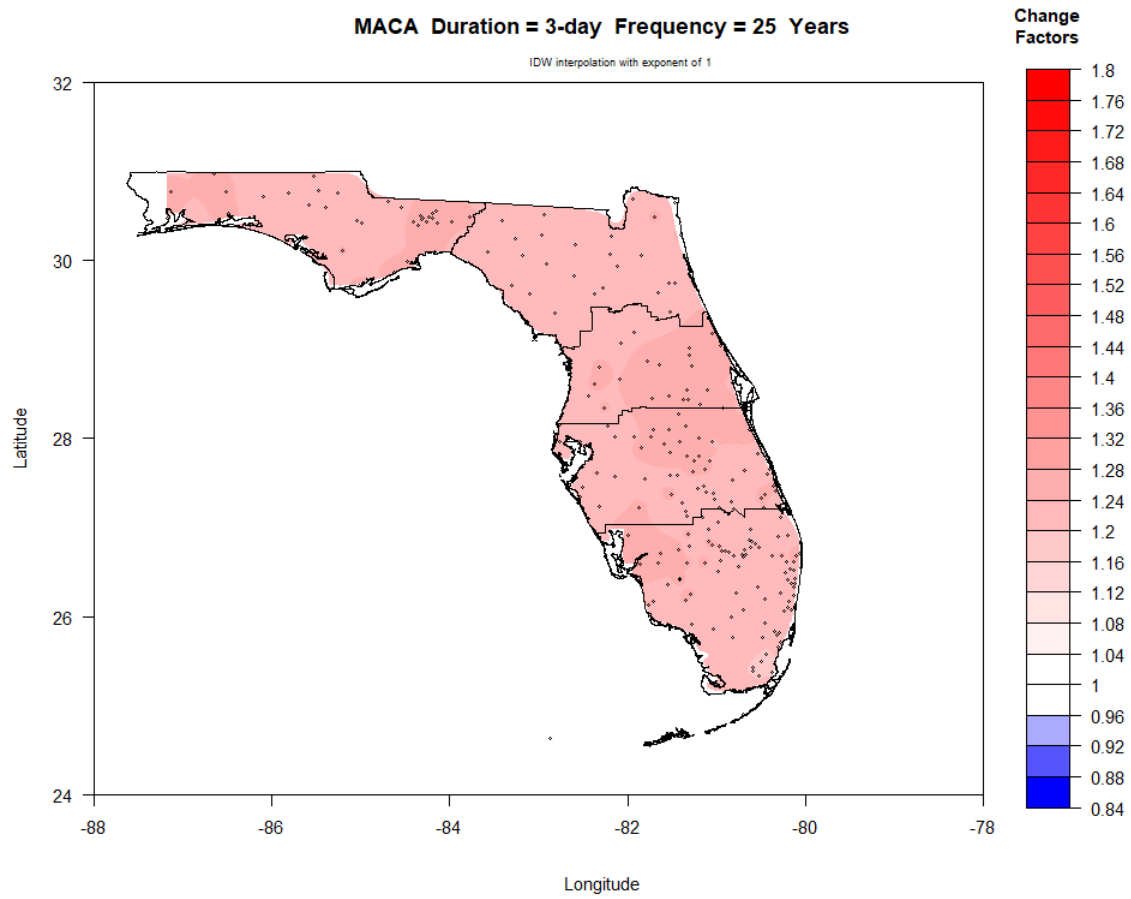




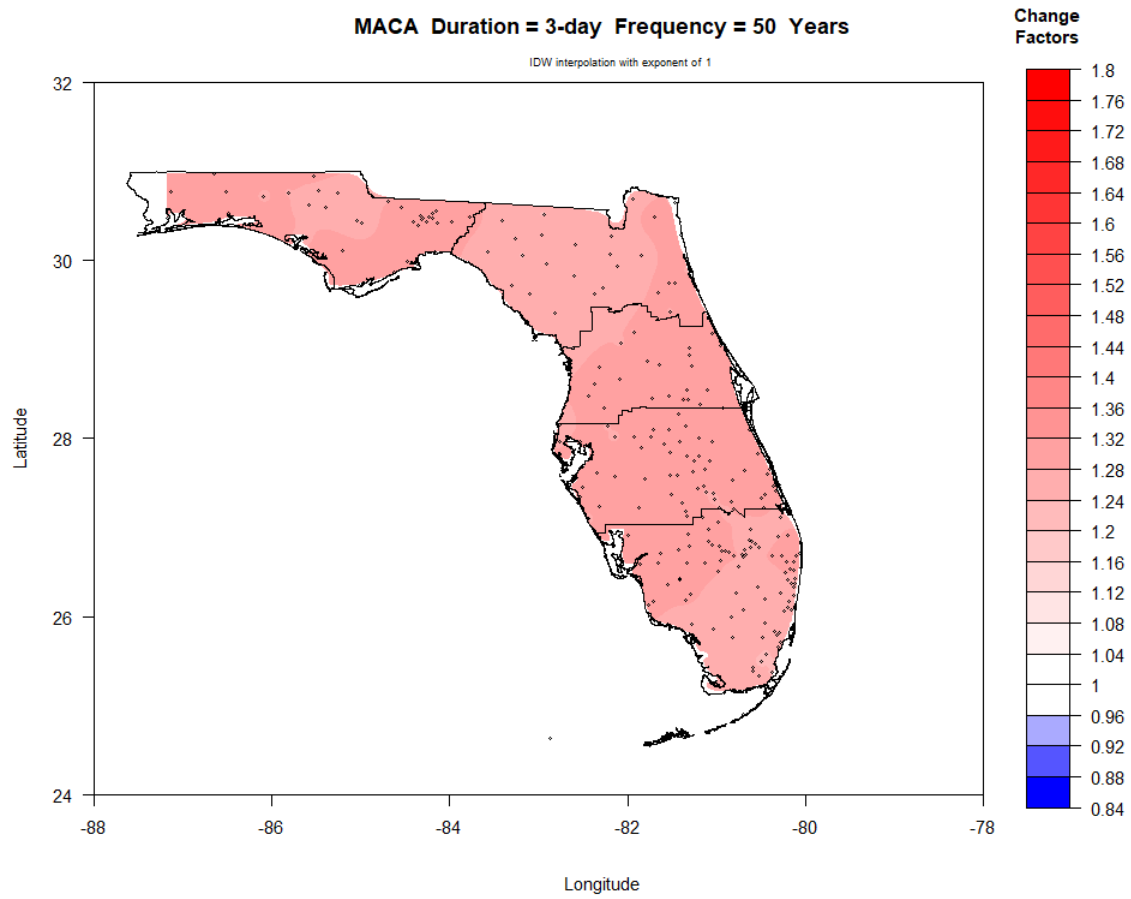
**Figure III-55. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 5-year return period.**



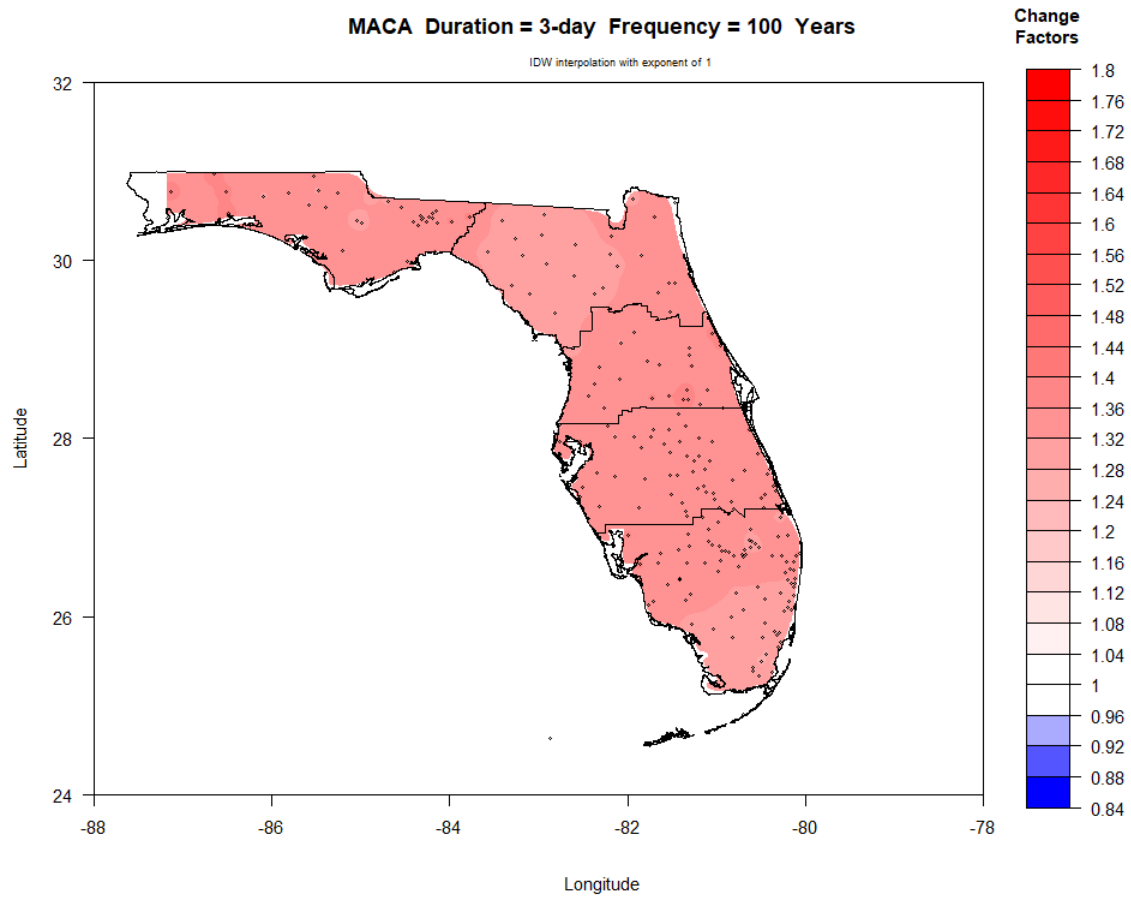
**Figure III-56. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 10-year return period.**



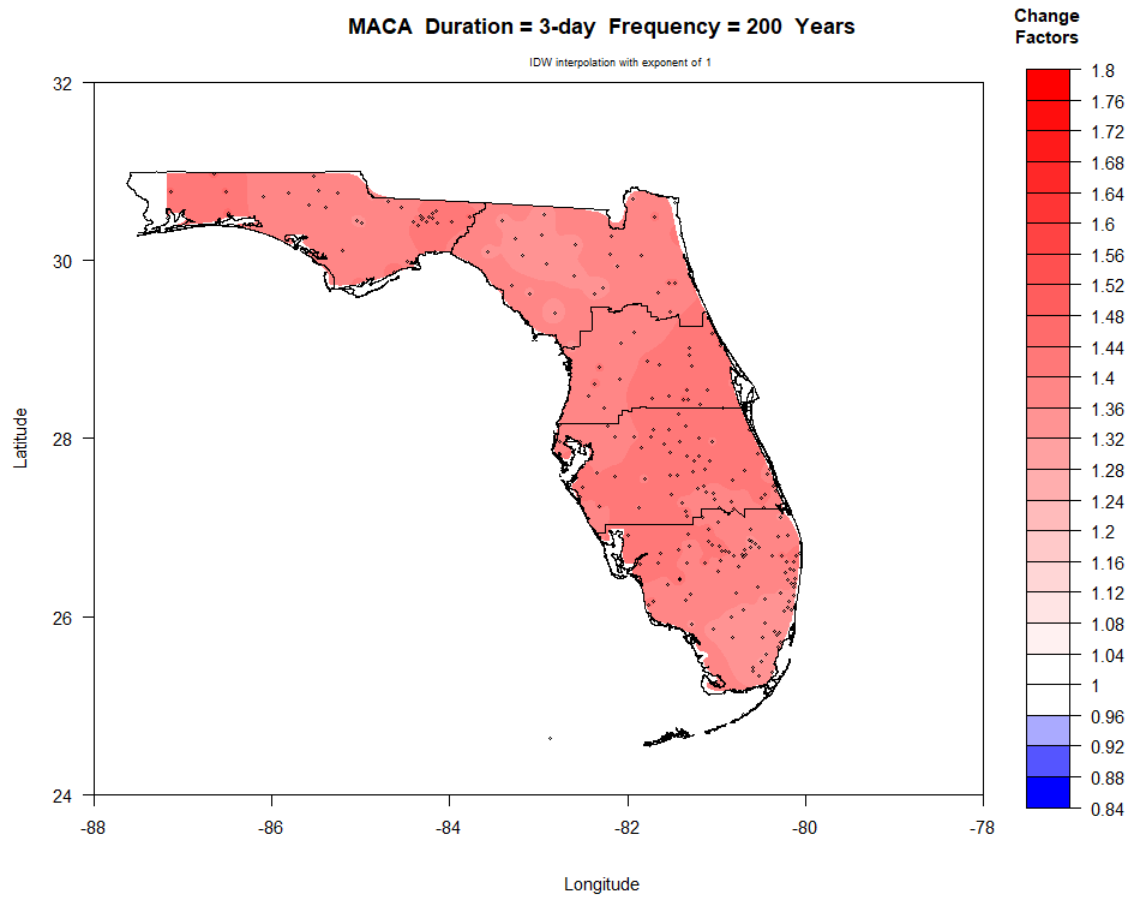
**Figure III-57. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 25-year return period.**



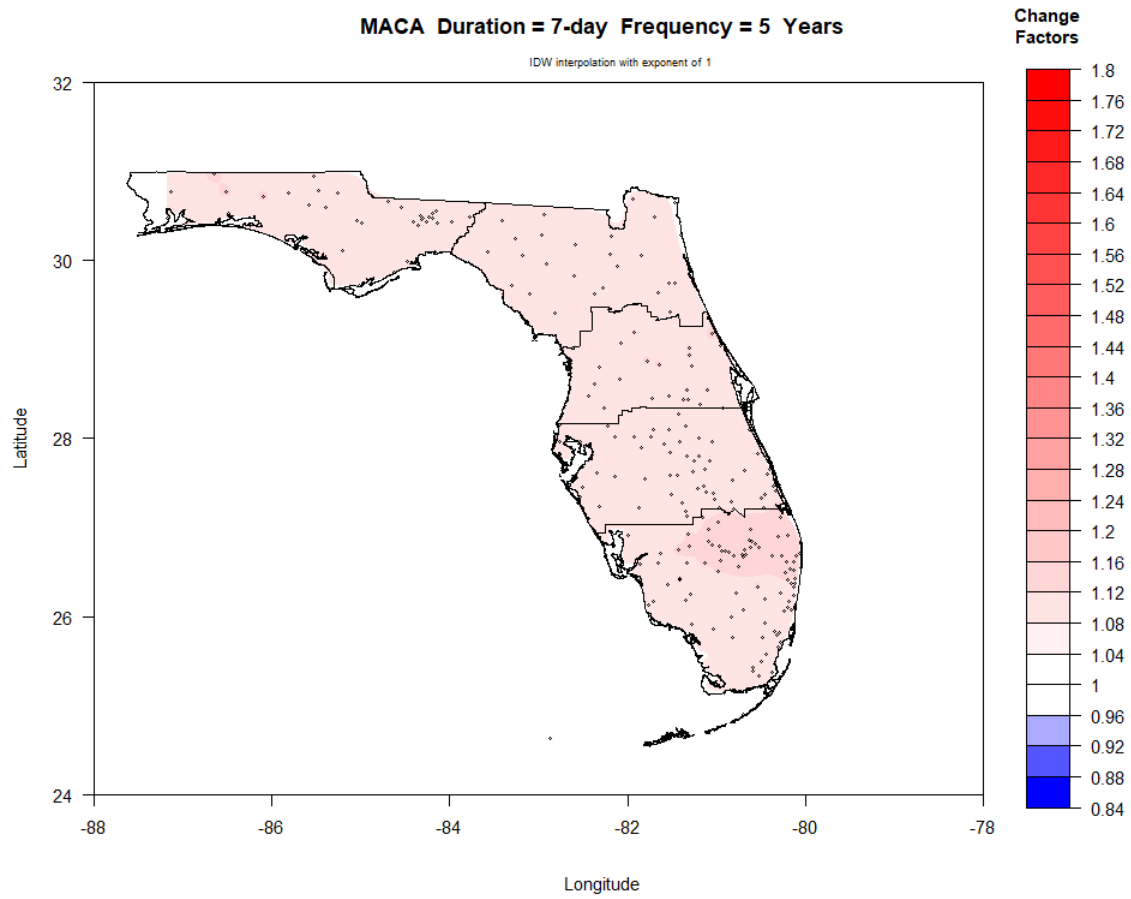
**Figure III-58. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 50-year return period.**



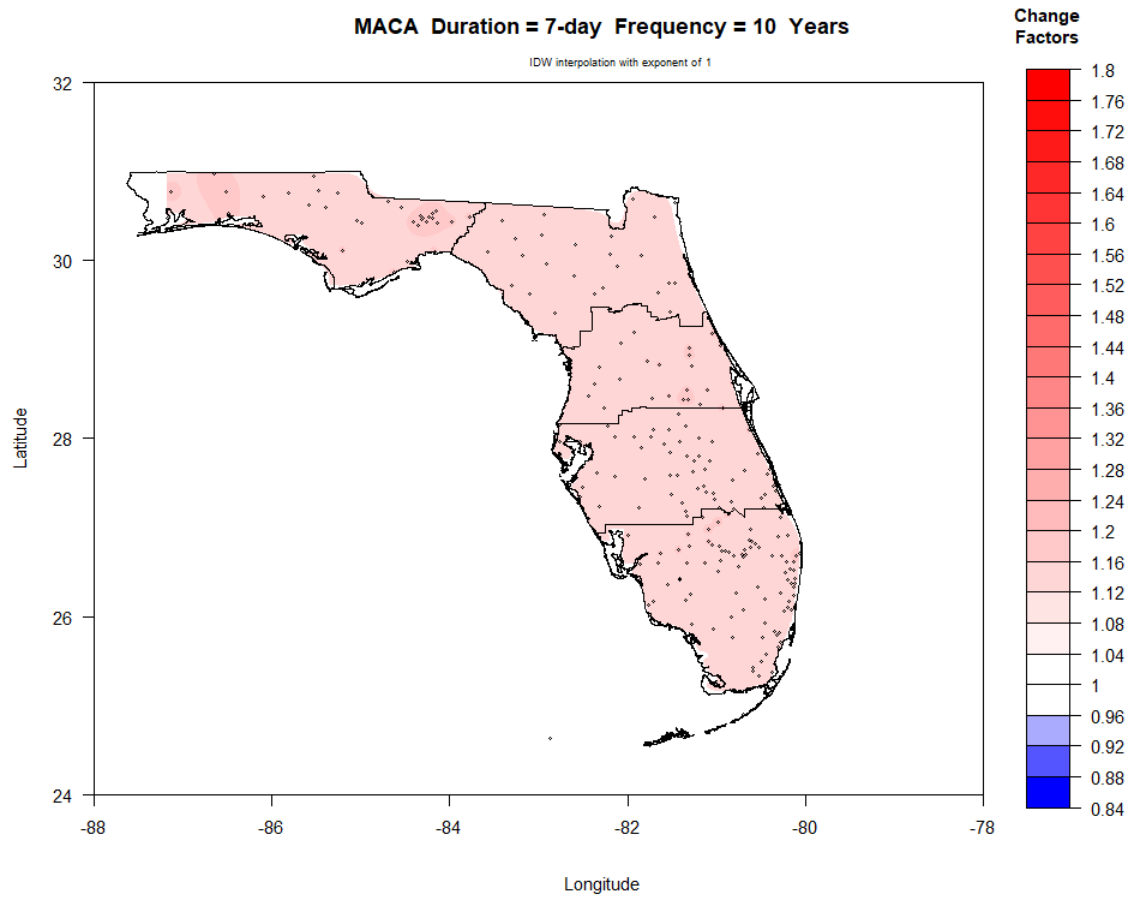
**Figure III-59. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 100-year return period.**



**Figure III-60. Map of NEAR period (2030-2069) change factors across Florida for 3-day duration and 200-year return period.**

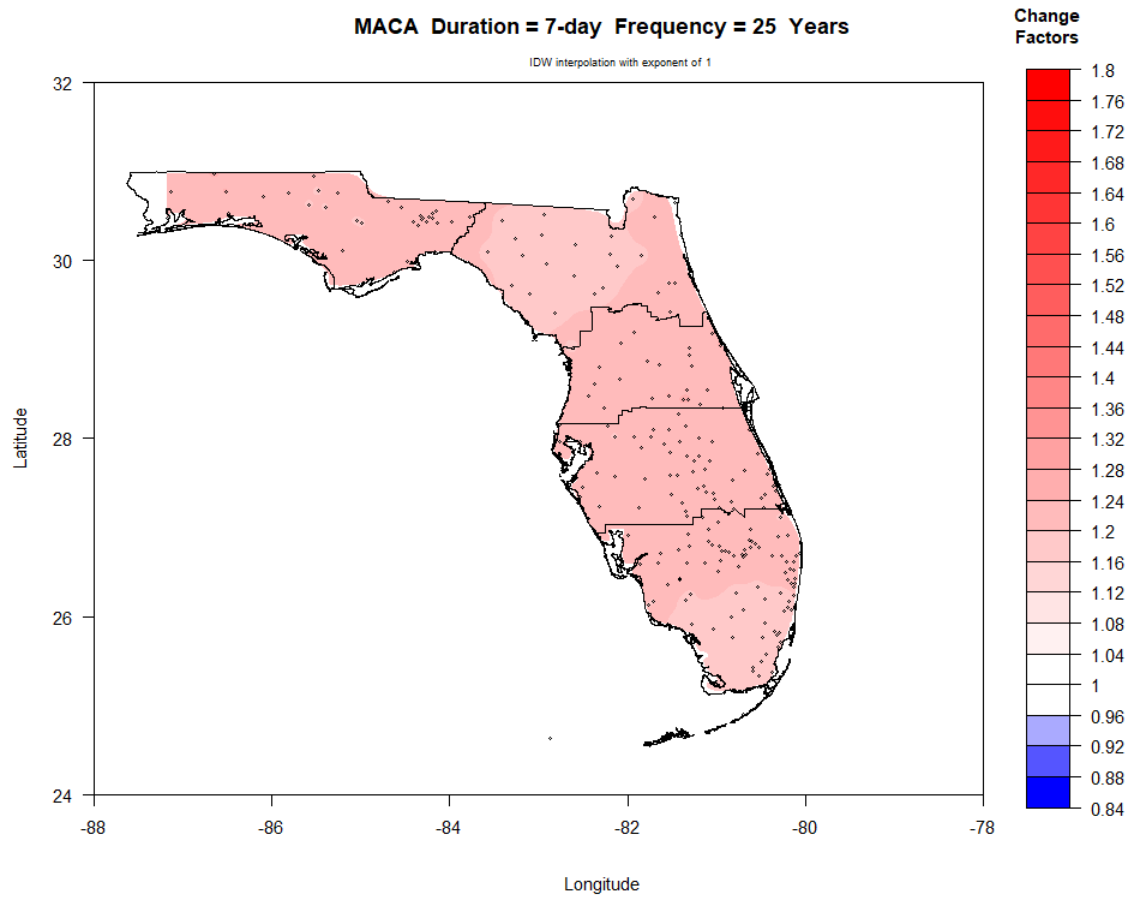


**Figure III-61. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 5-year return period.**

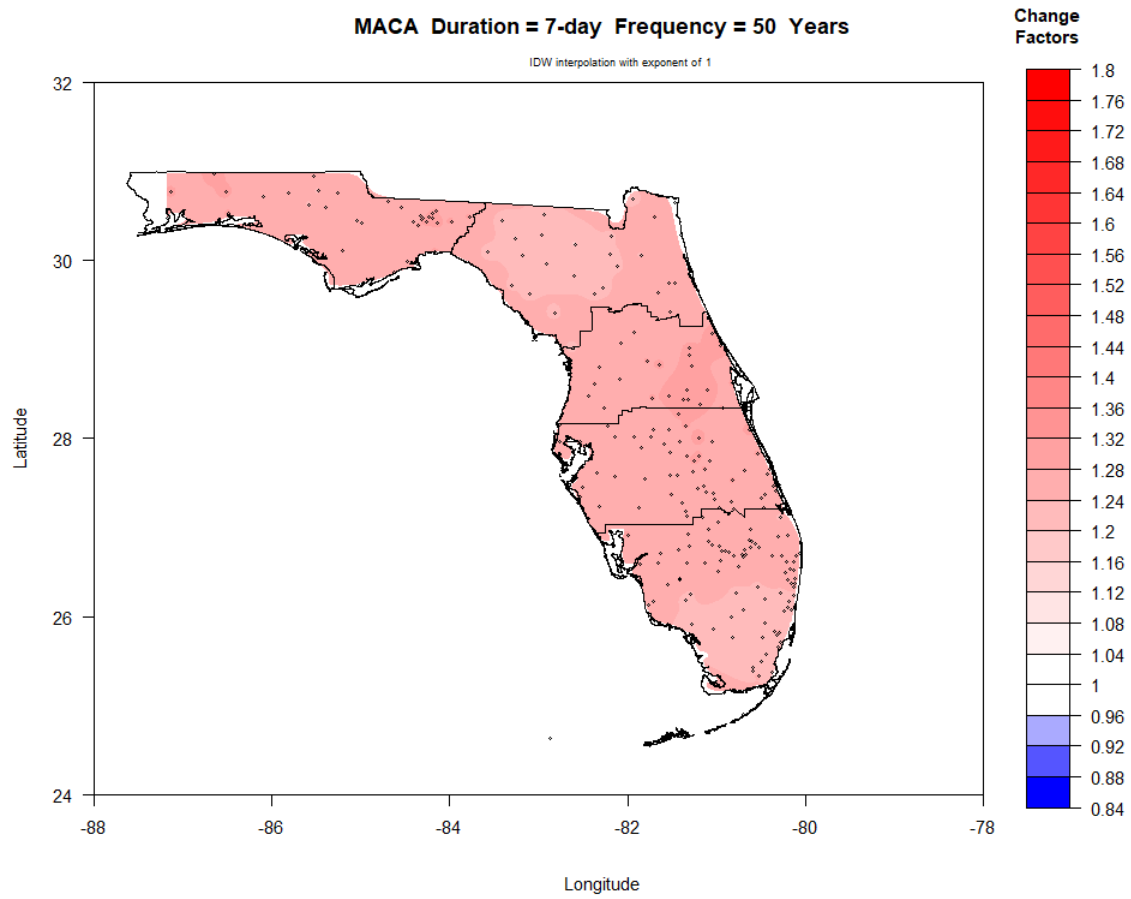


**Figure III-62. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 10-year return period.**

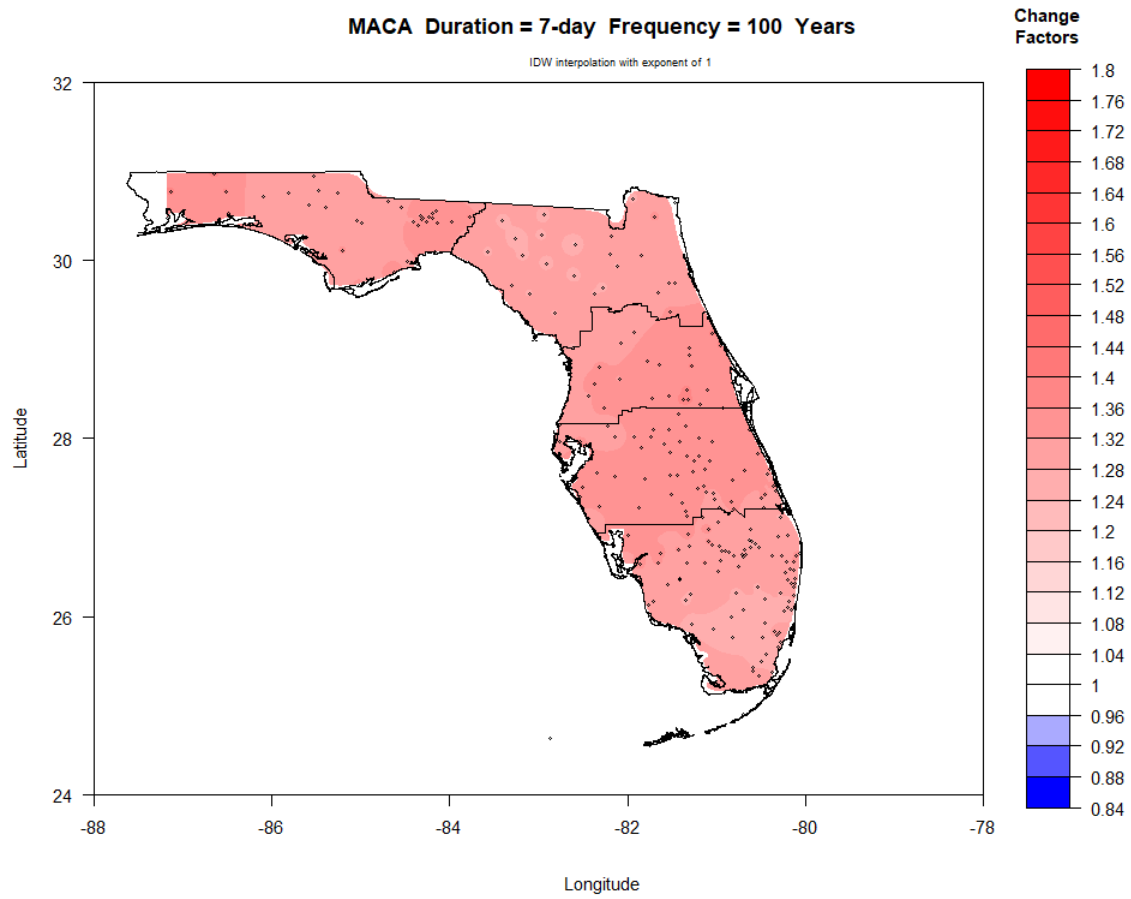




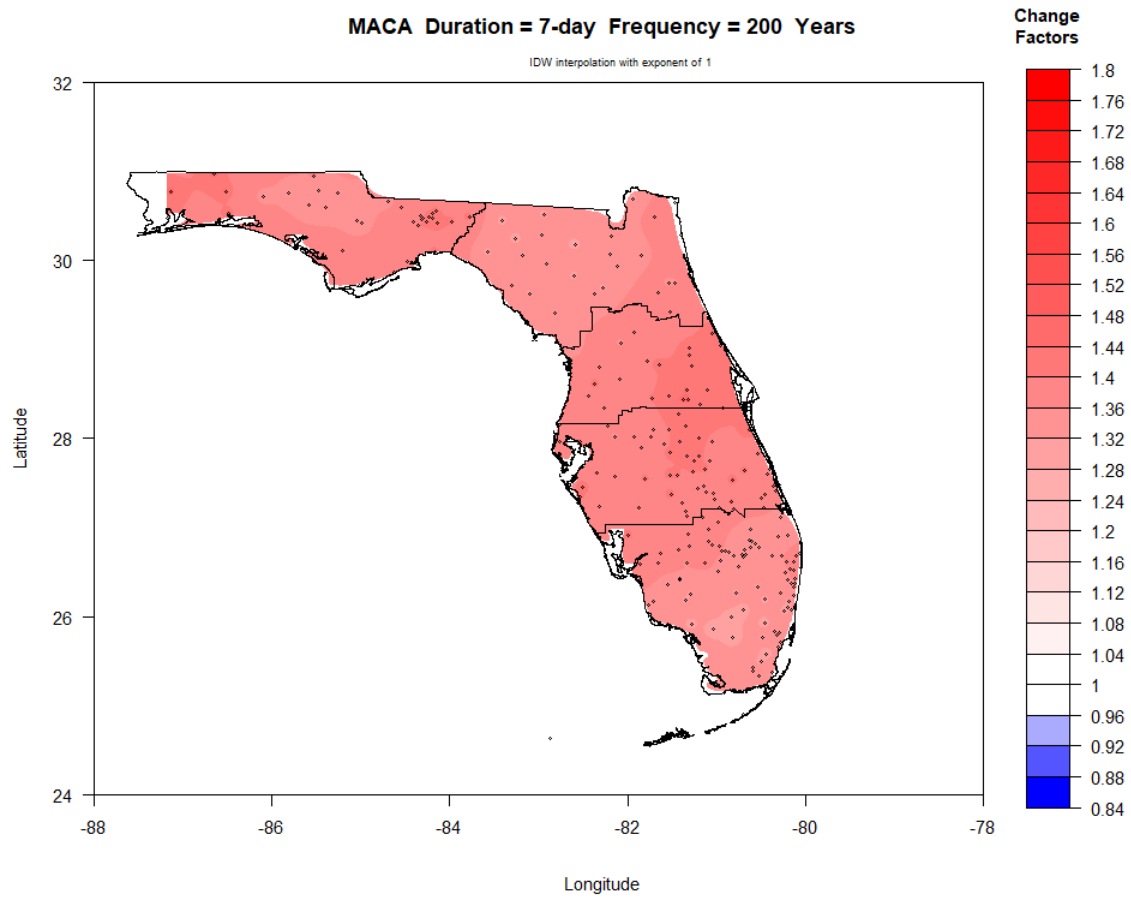
**Figure III-63. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 25-year return period.**



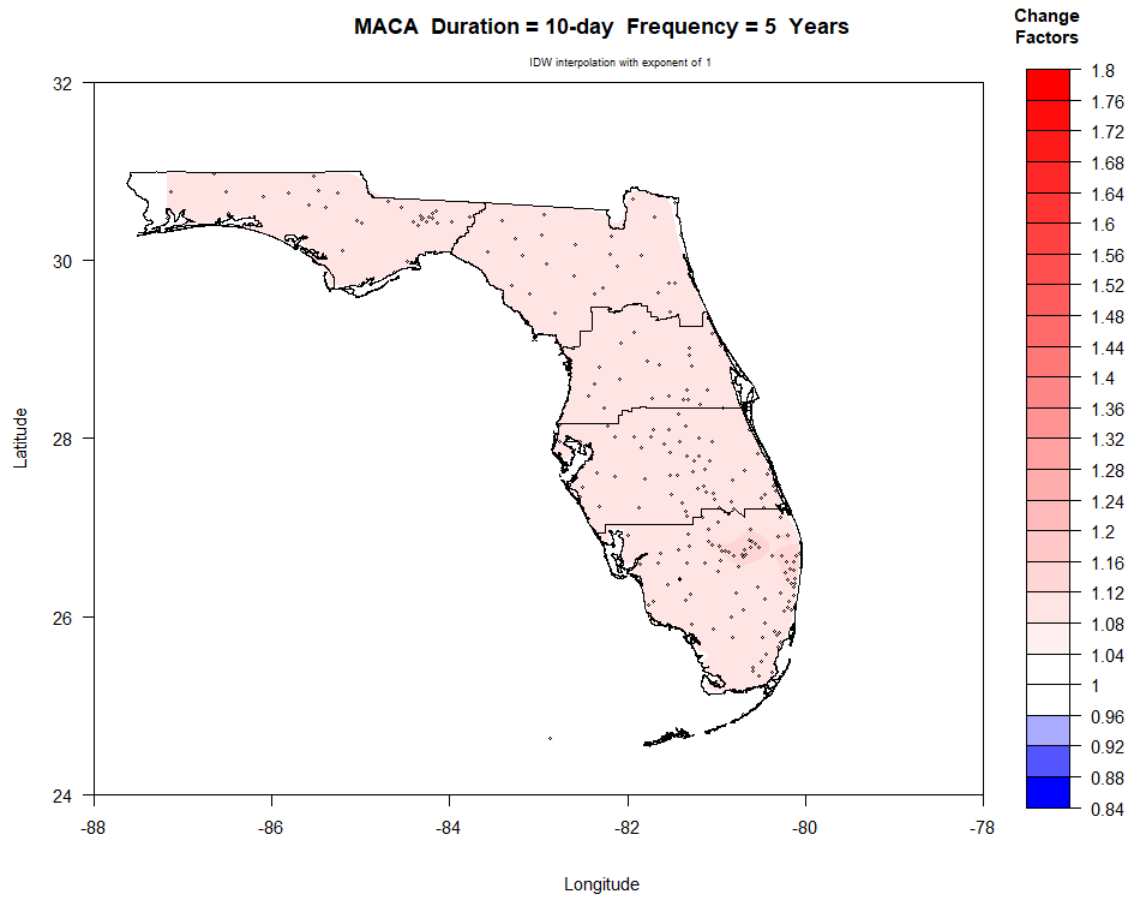
**Figure III-64. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 50-year return period.**



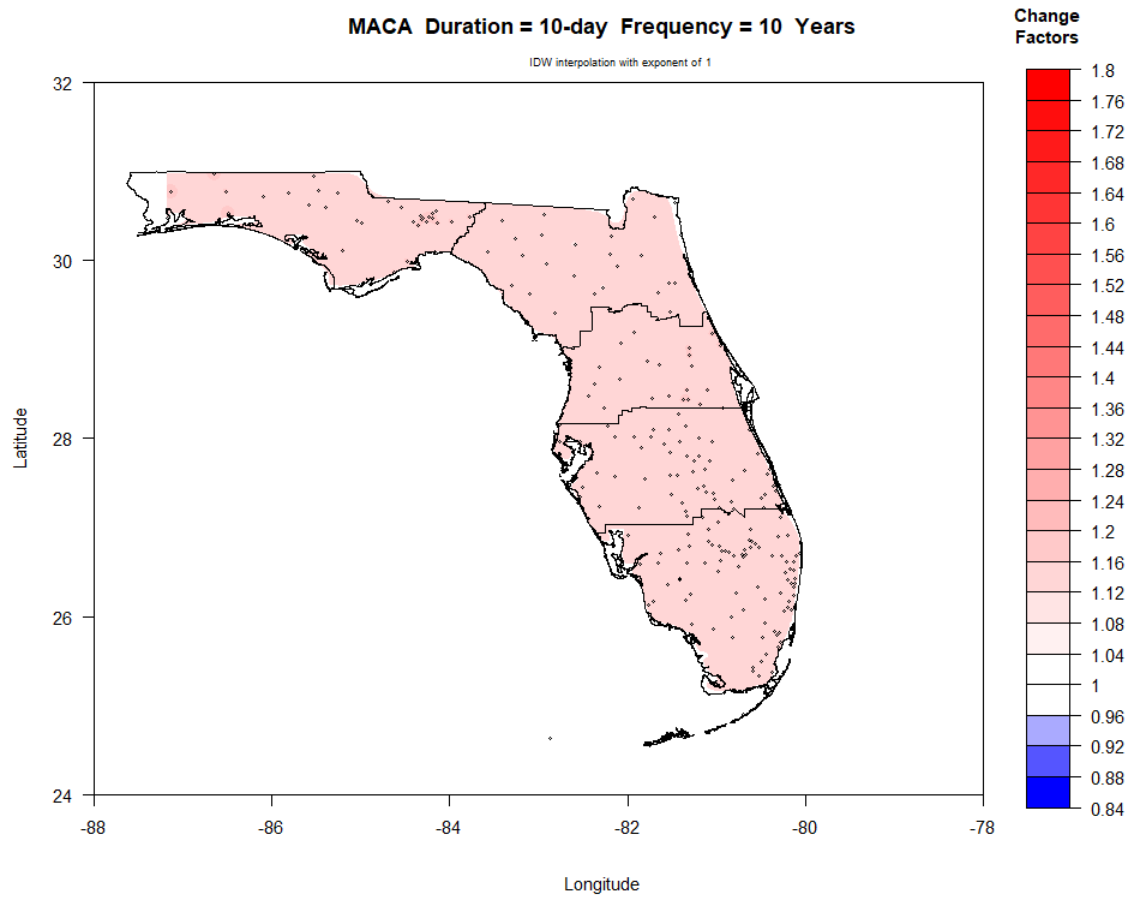
**Figure III-65. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 100-year return period.**



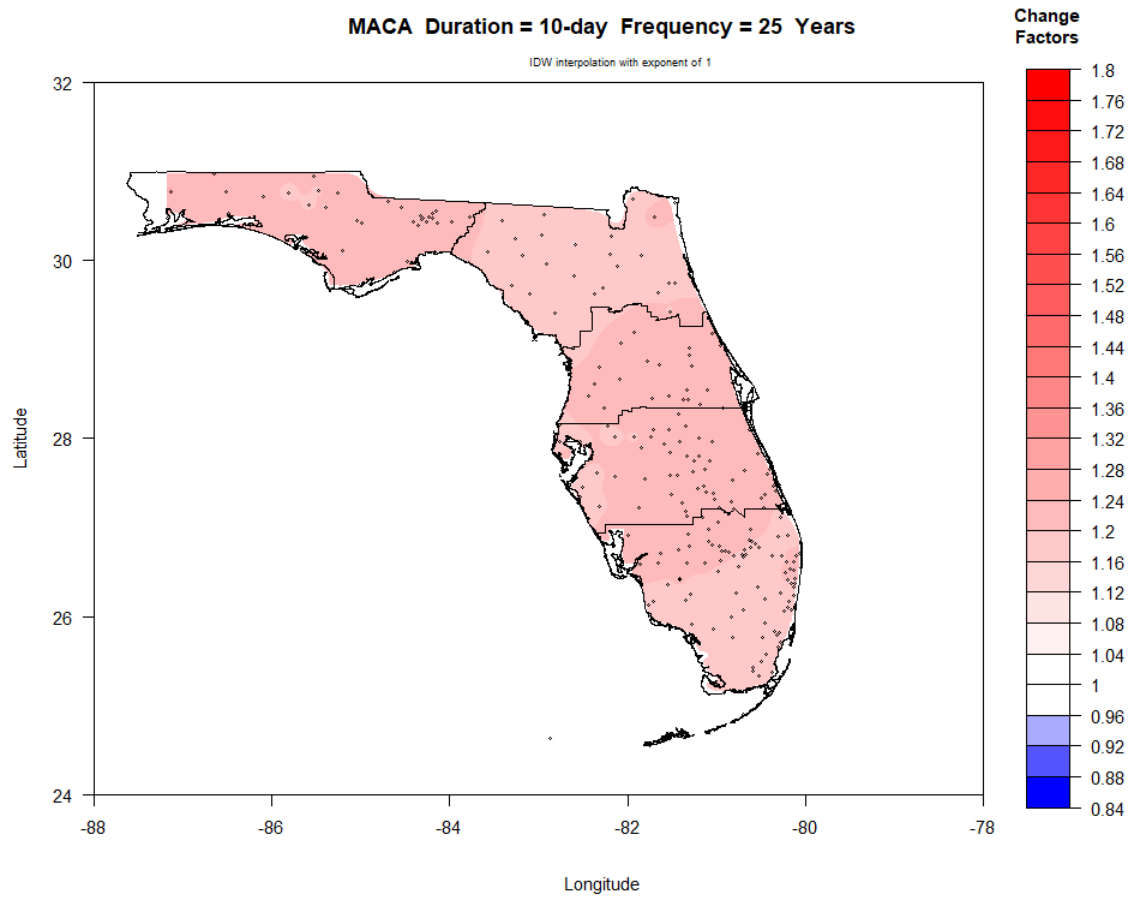
**Figure III-66. Map of NEAR period (2030-2069) change factors across Florida for 7-day duration and 200-year return period.**



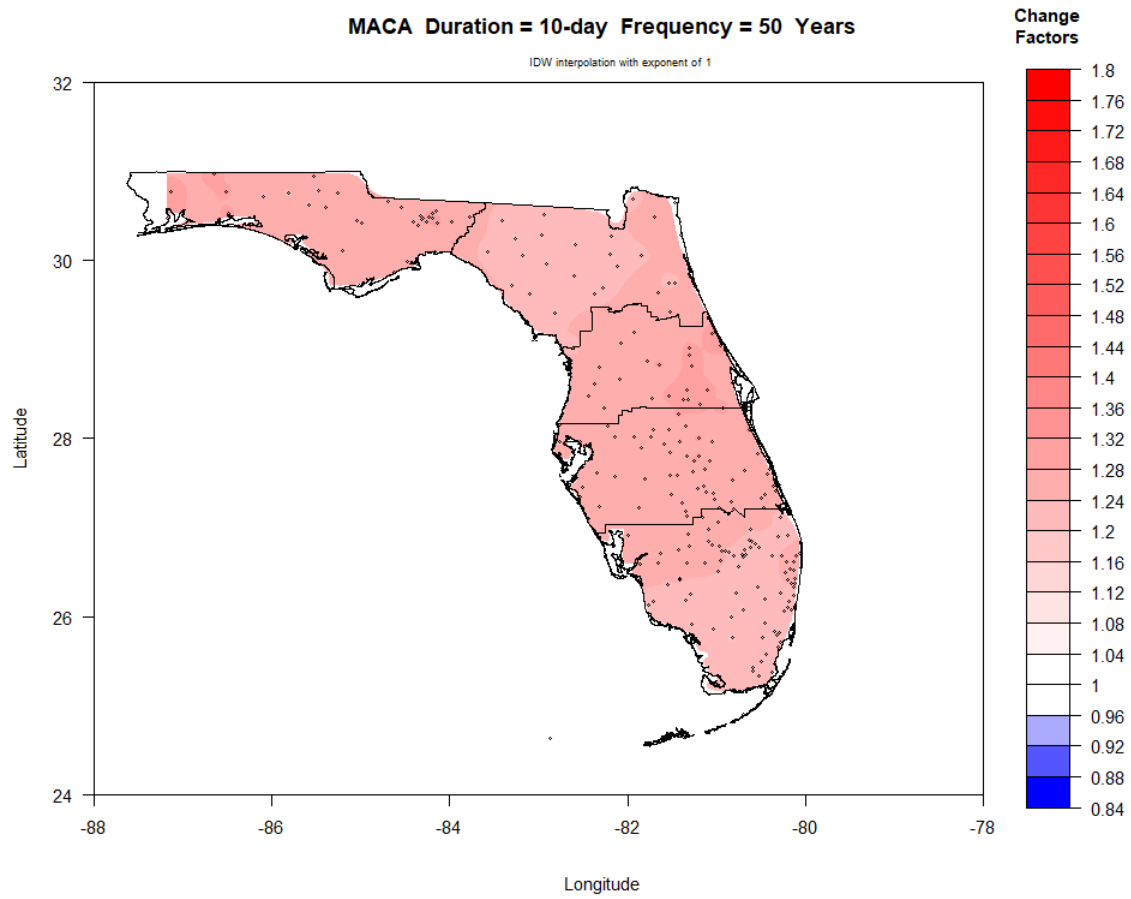
**Figure III-67. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 5-year return period.**



**Figure III-68. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 10-year return period.**

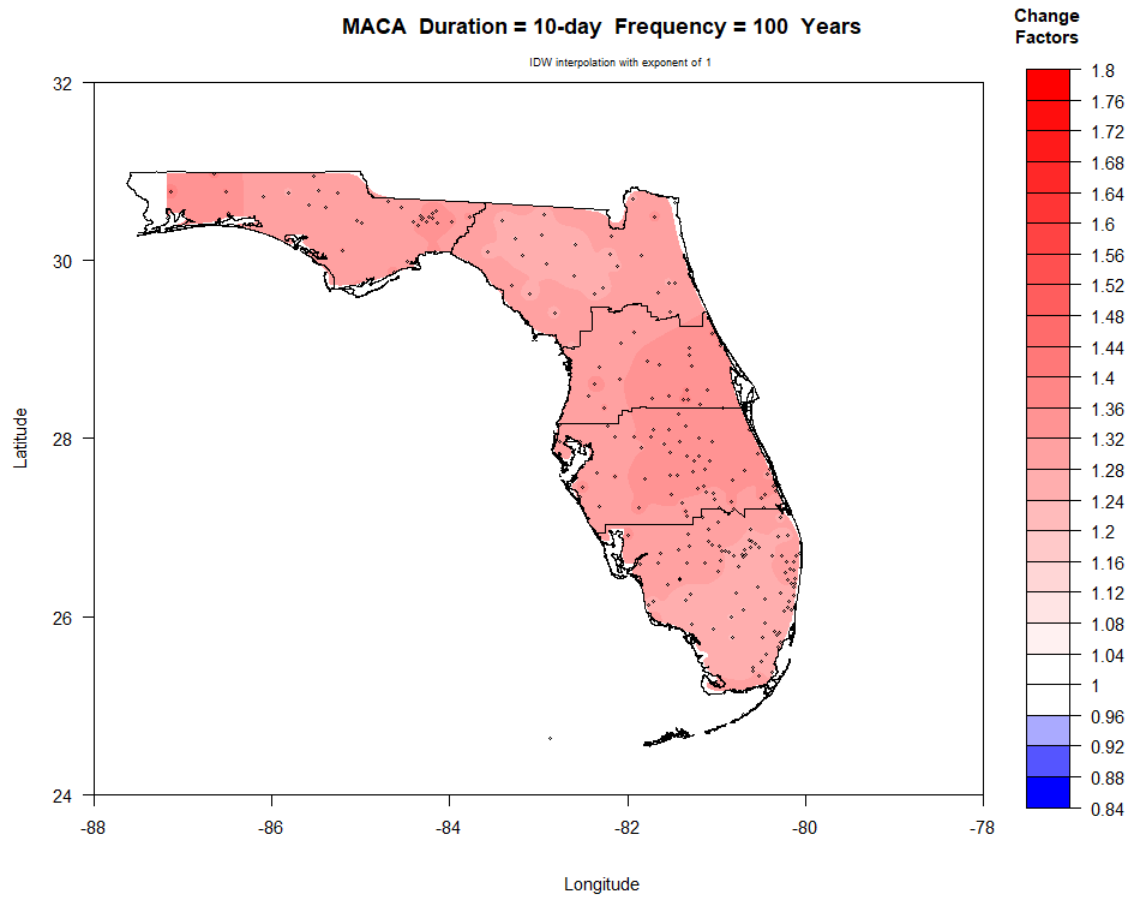


**Figure III-69. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 25-year return period.**

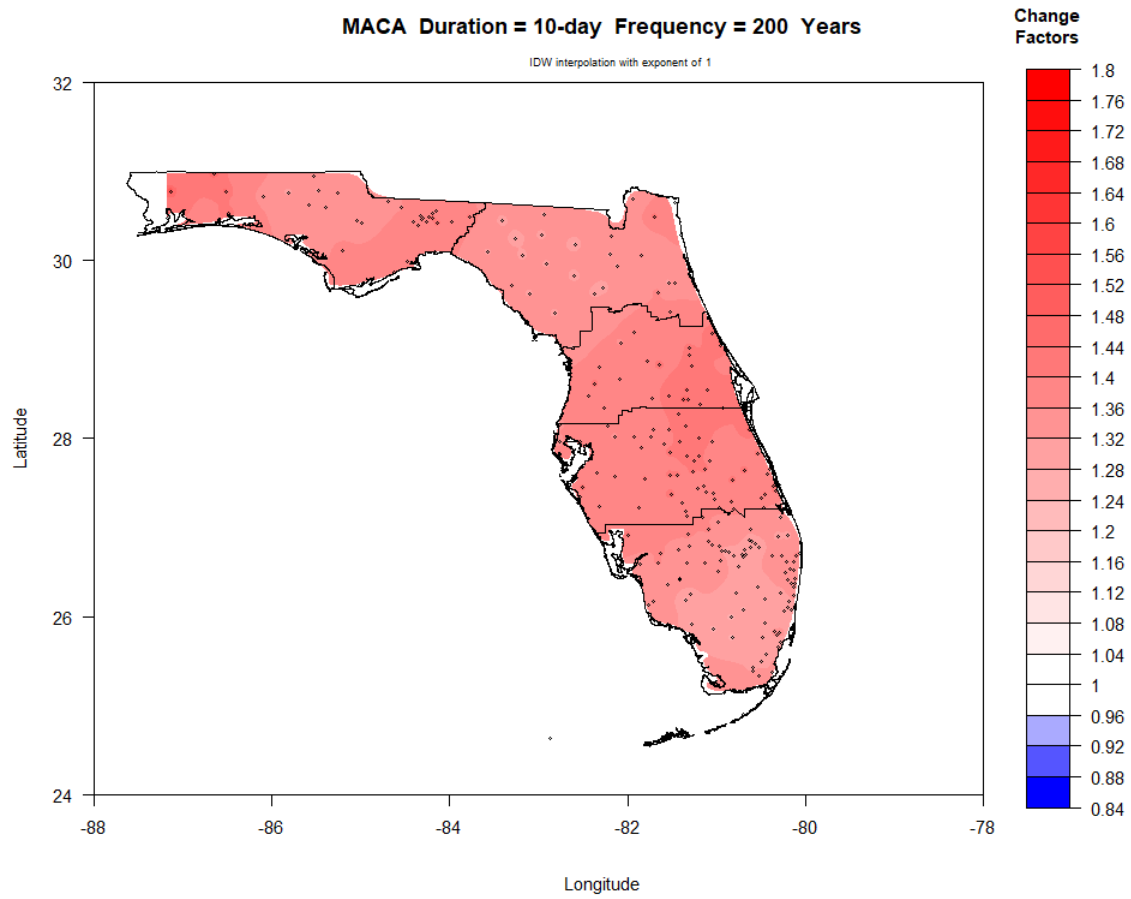


**Figure III-70. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 50-year return period.**





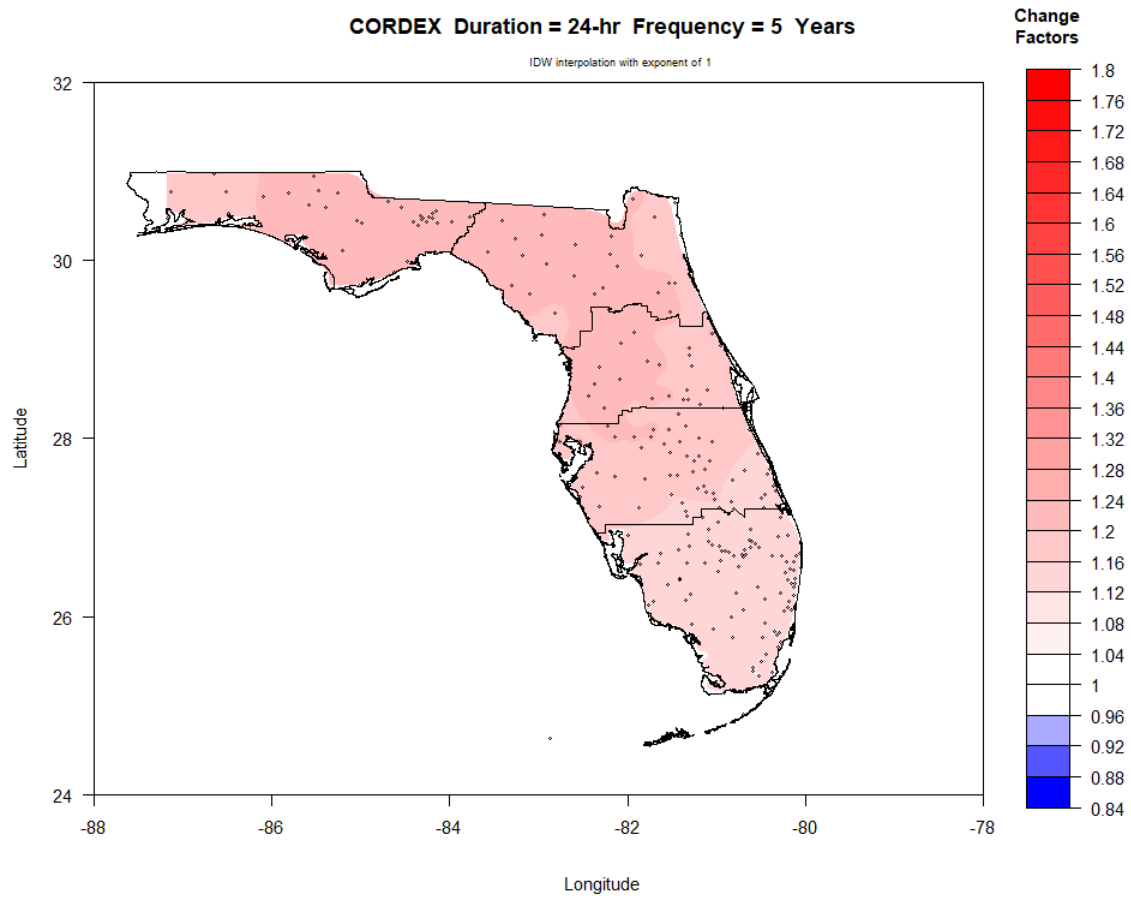
**Figure III-71. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 100-year return period.**



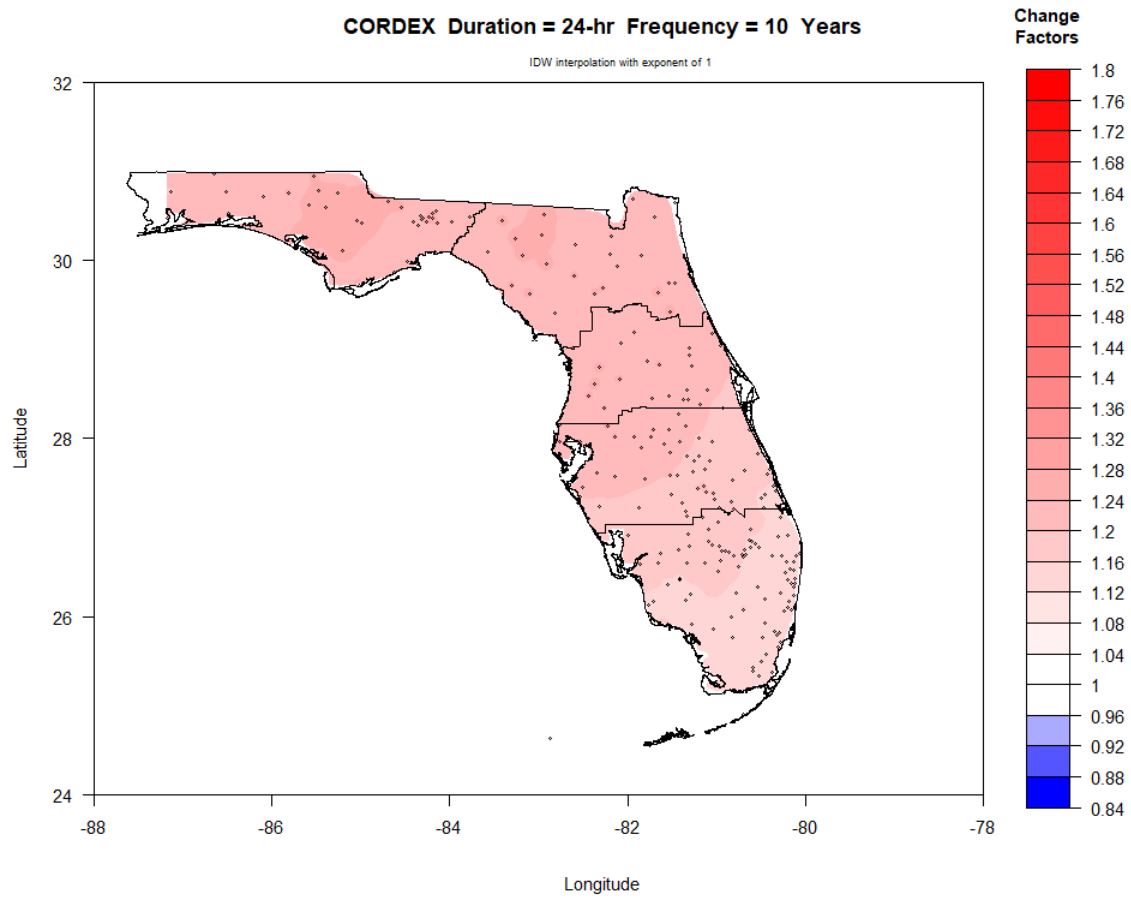
**Figure III-72. Map of NEAR period (2030-2069) change factors across Florida for 10-day duration and 200-year return period.**

## **APPENDIX IV. Change Factor Maps for FAR period (2060-2099)**

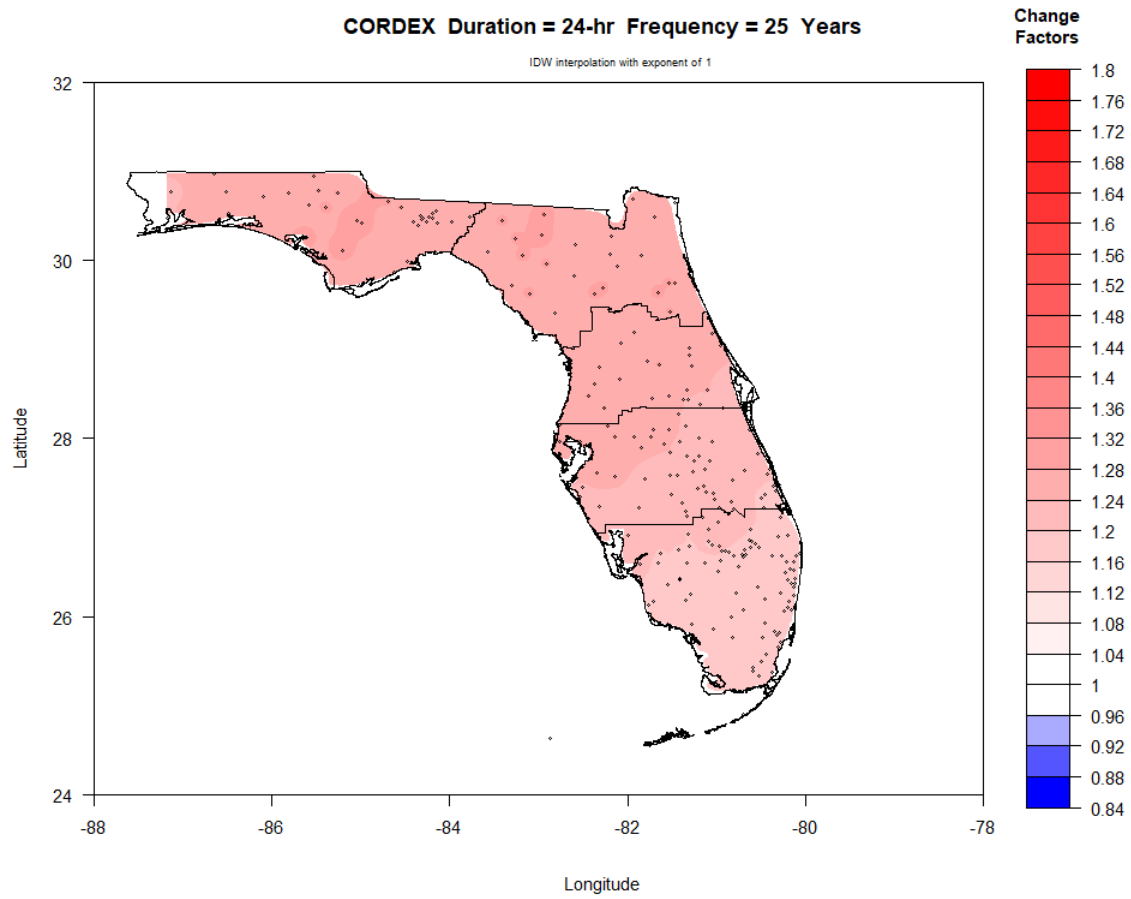
Presented herein are maps of the change factors across Florida for the FAR period (2060-2099) generated using IDW interpolation with an exponent of 1. The maps were created for durations: 24-hr, 3-day, 7-day and 10-day, and return periods: 5-yr, 10-yr, 25-yr, 50-yr, 100-yr and 200-yr.



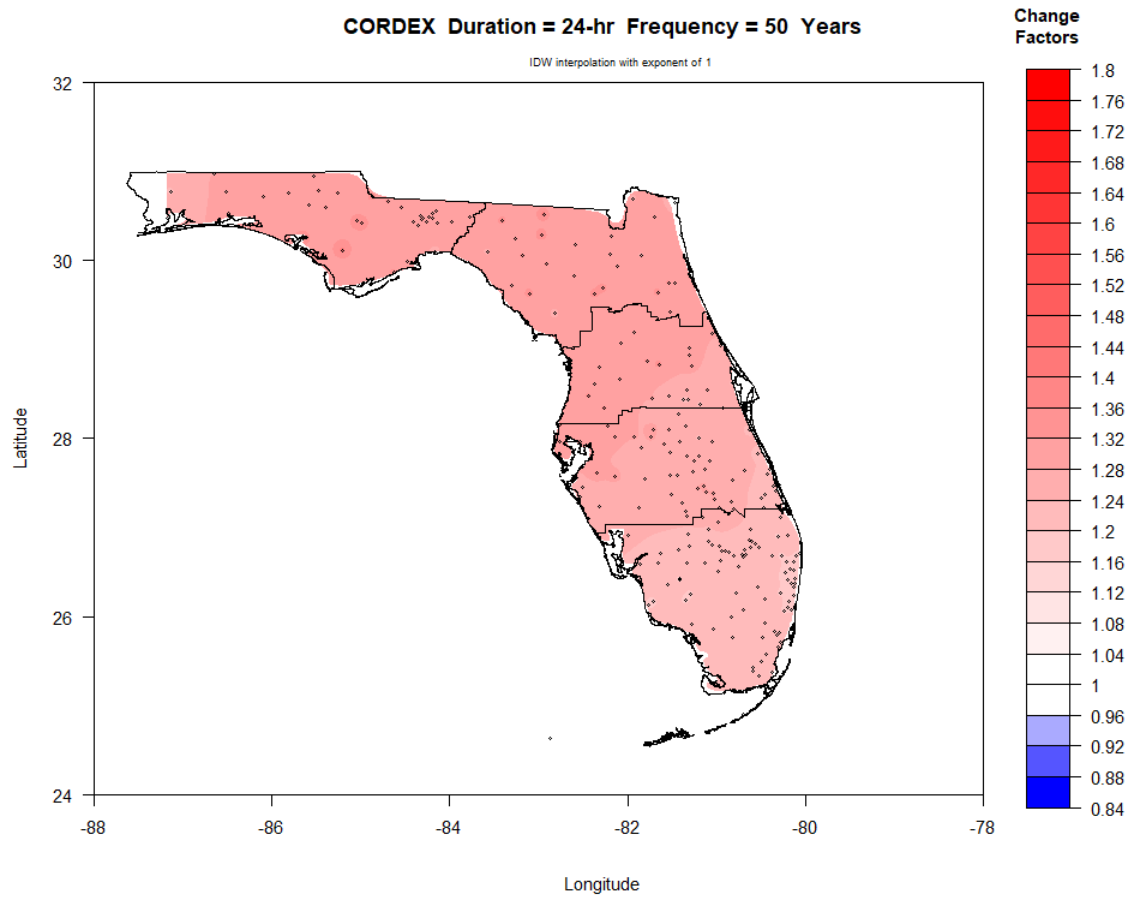
**Figure IV-1. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 5-year return period.**



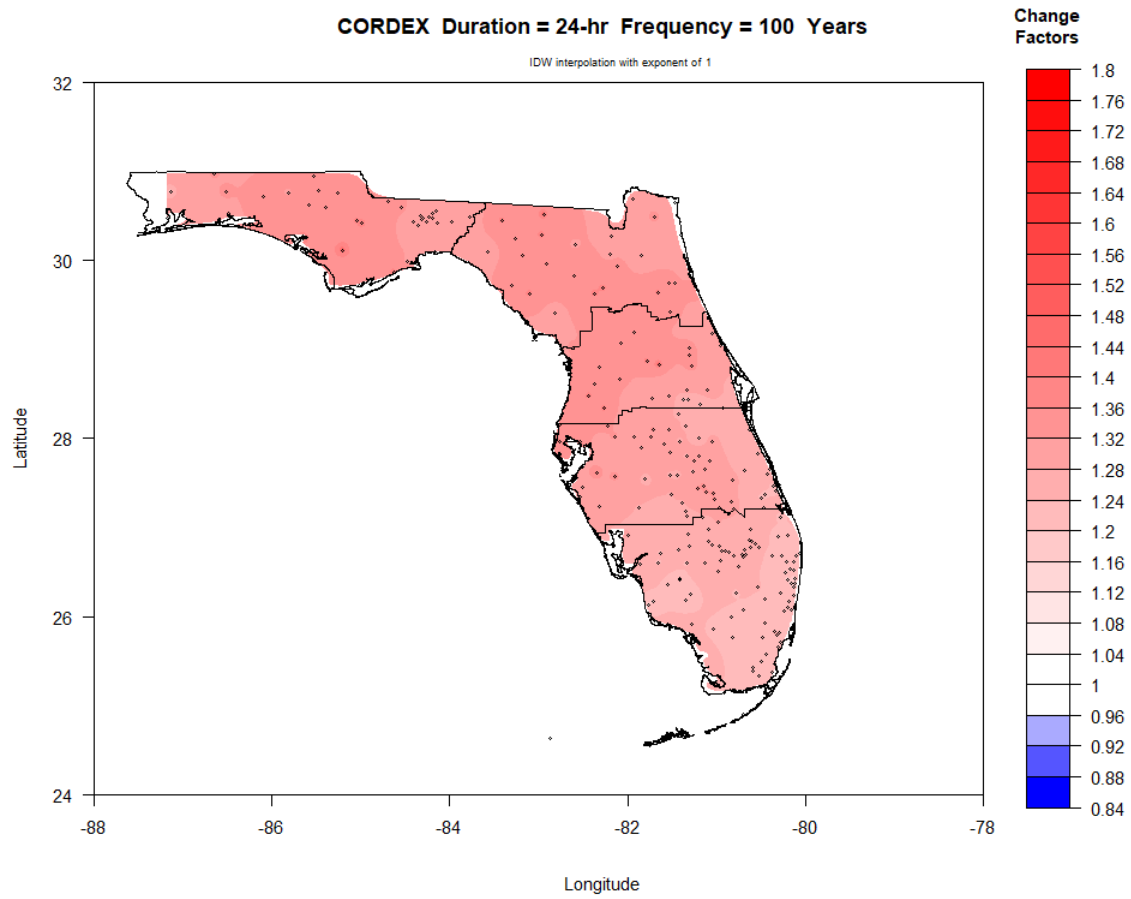
**Figure IV-2. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 10-year return period.**



**Figure IV-3. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 25-year return period.**

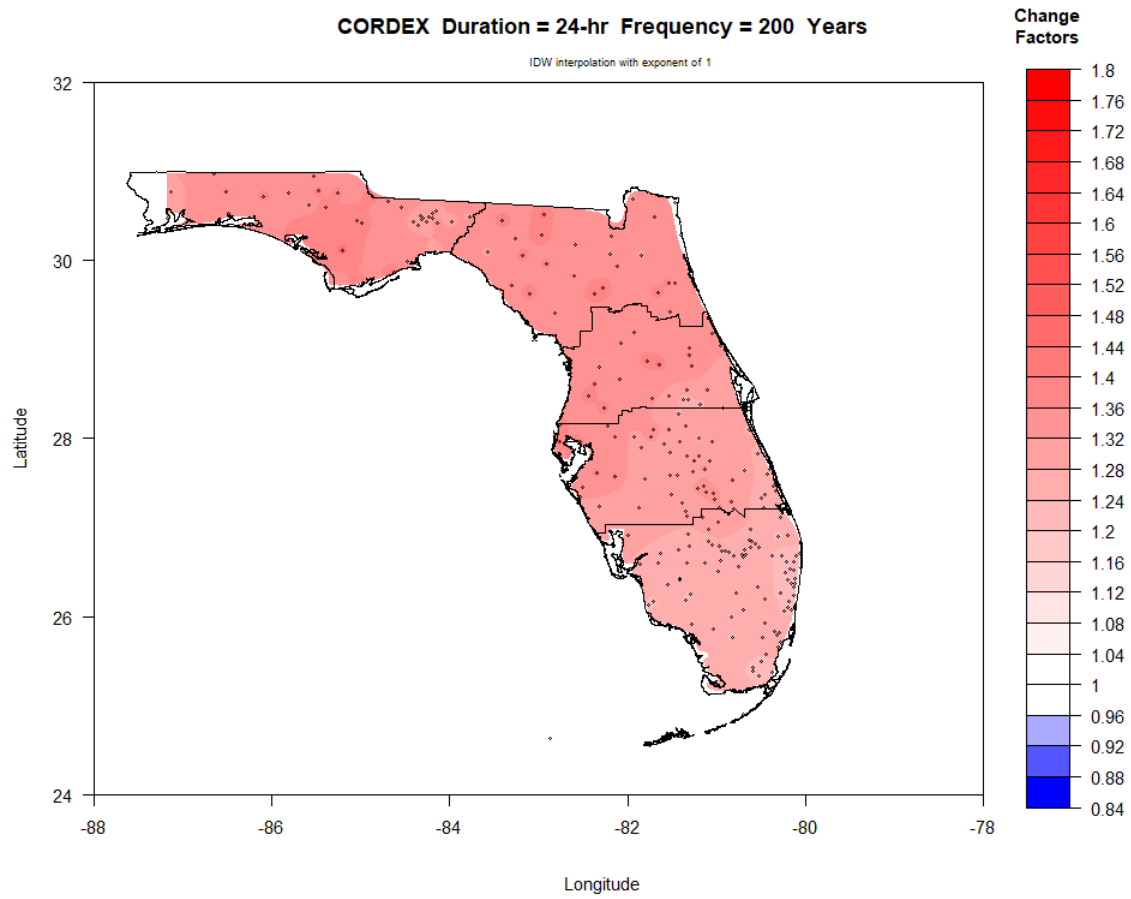


**Figure IV-4. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 50-year return period.**

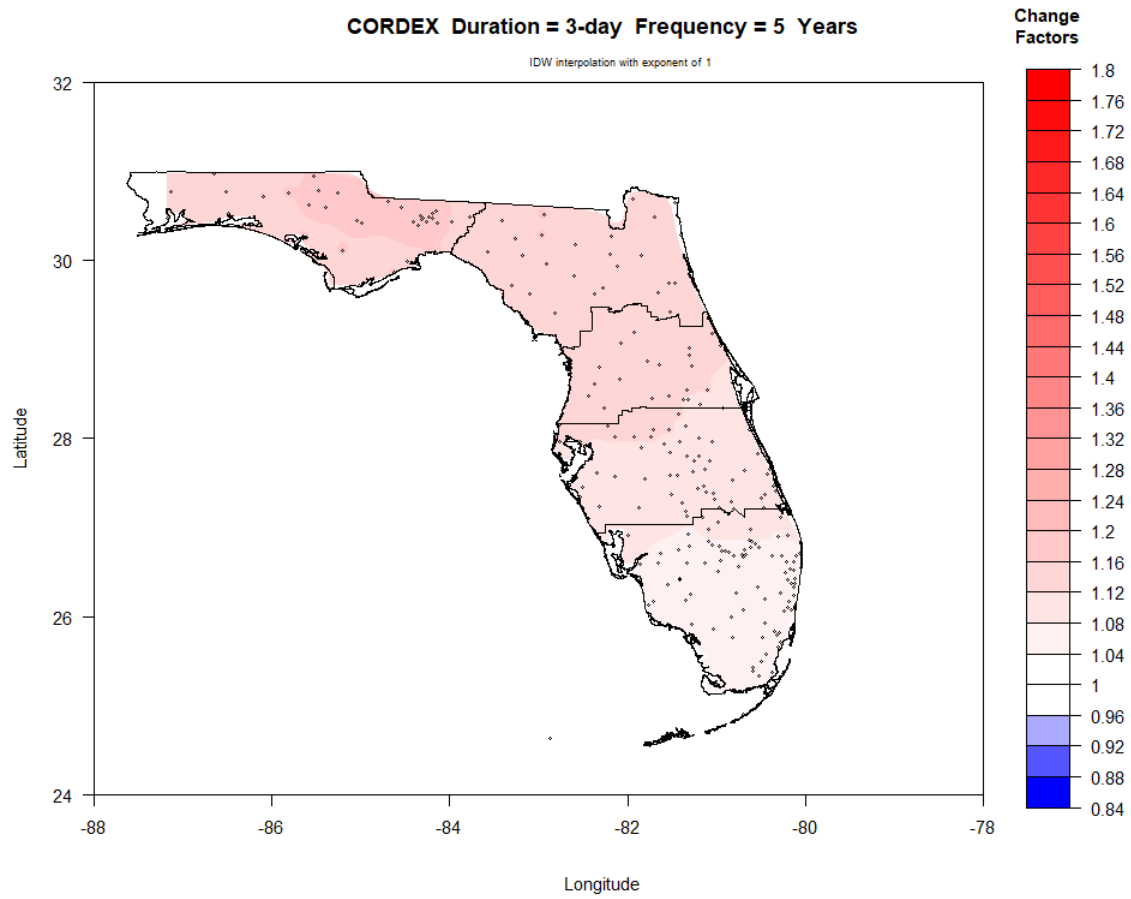


**Figure IV-5. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 100-year return period.**

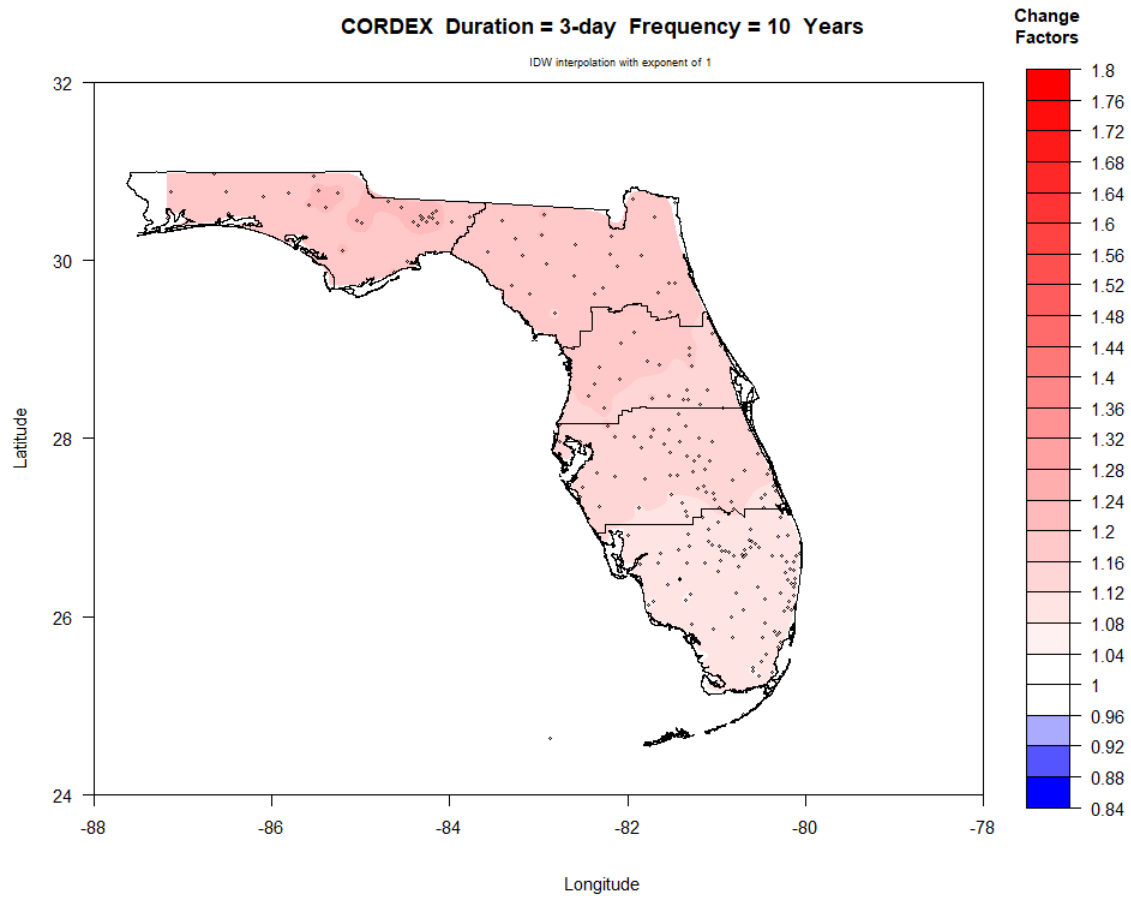




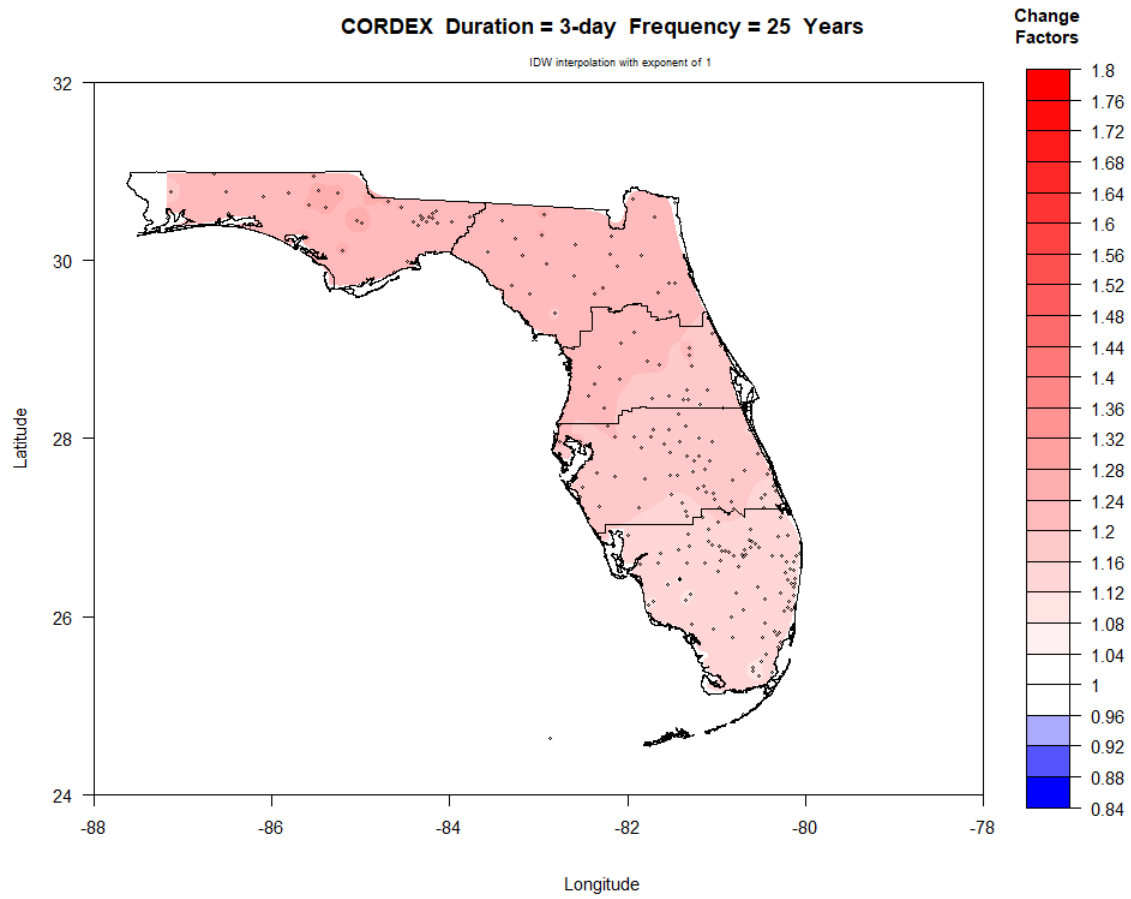
**Figure IV-6. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 200-year return period.**



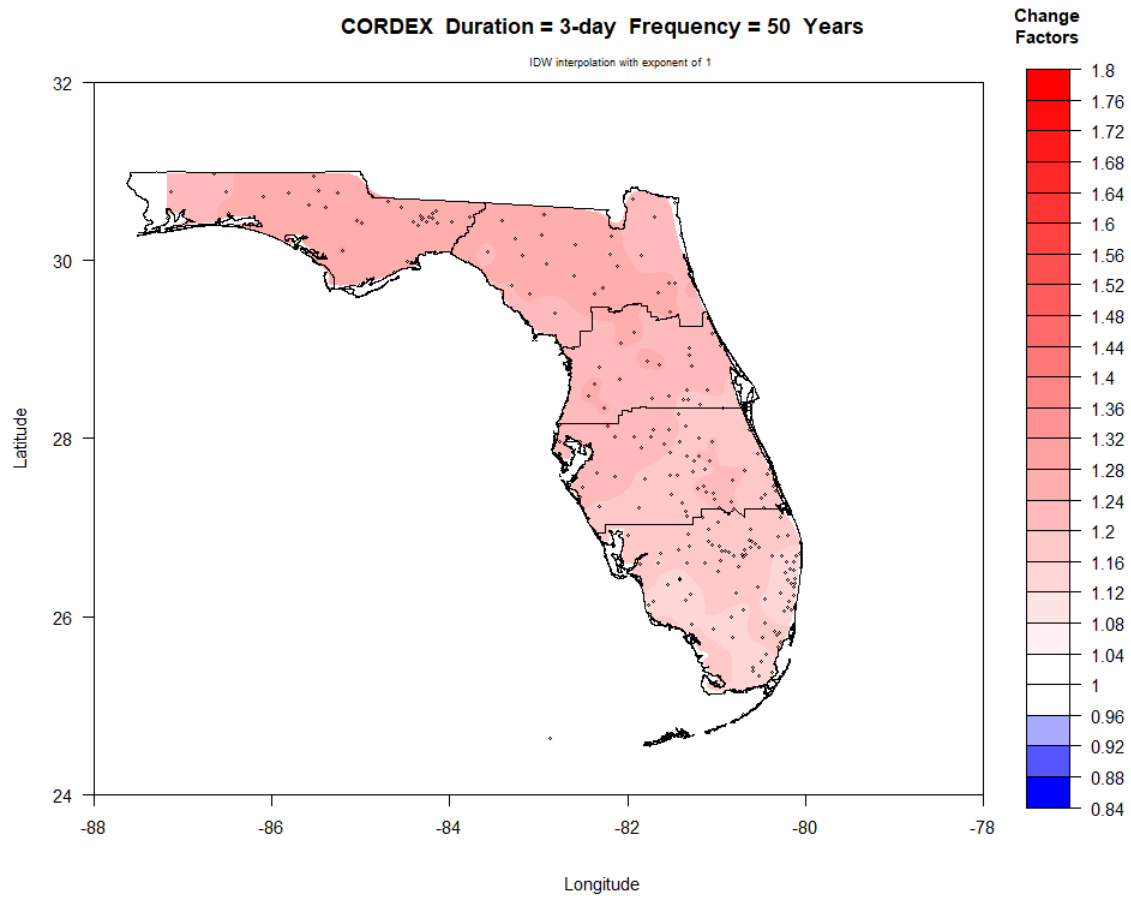
**Figure IV-7. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 5-year return period.**



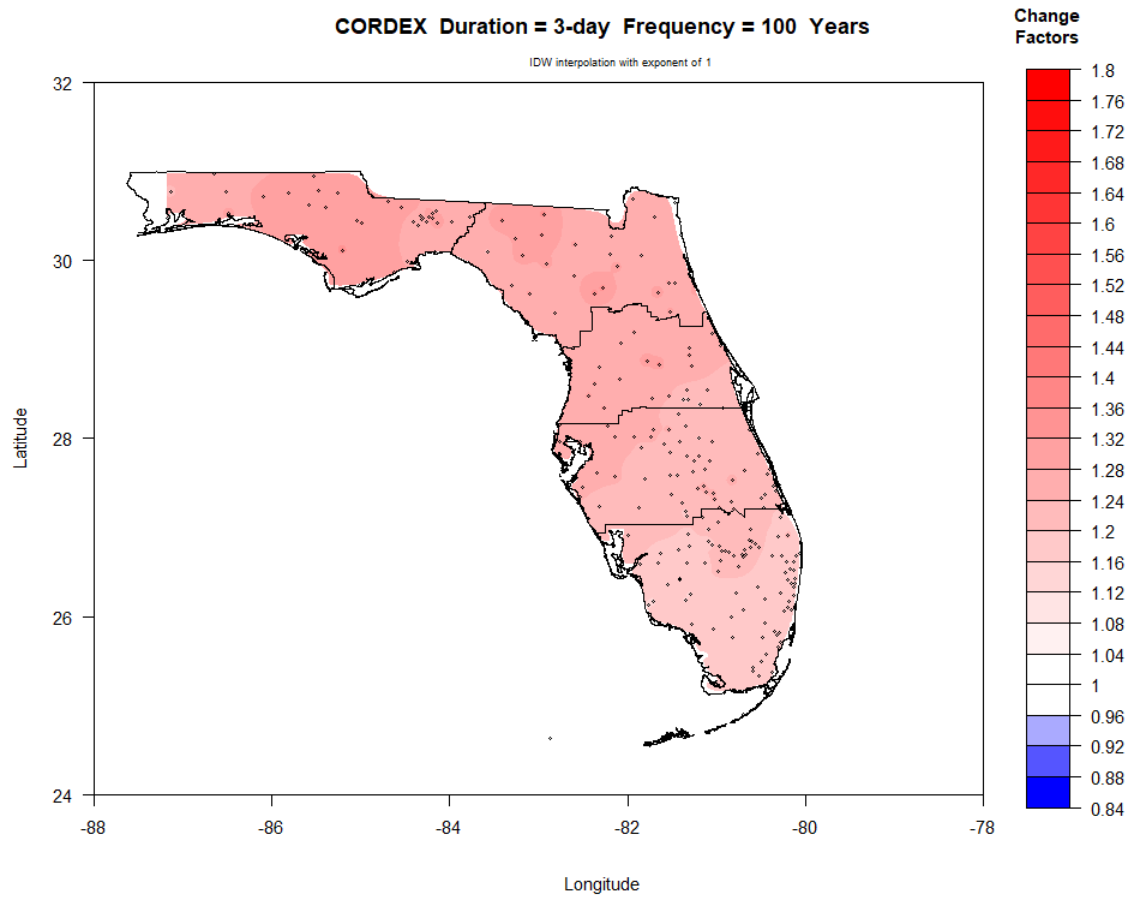
**Figure IV-8. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 10-year return period.**



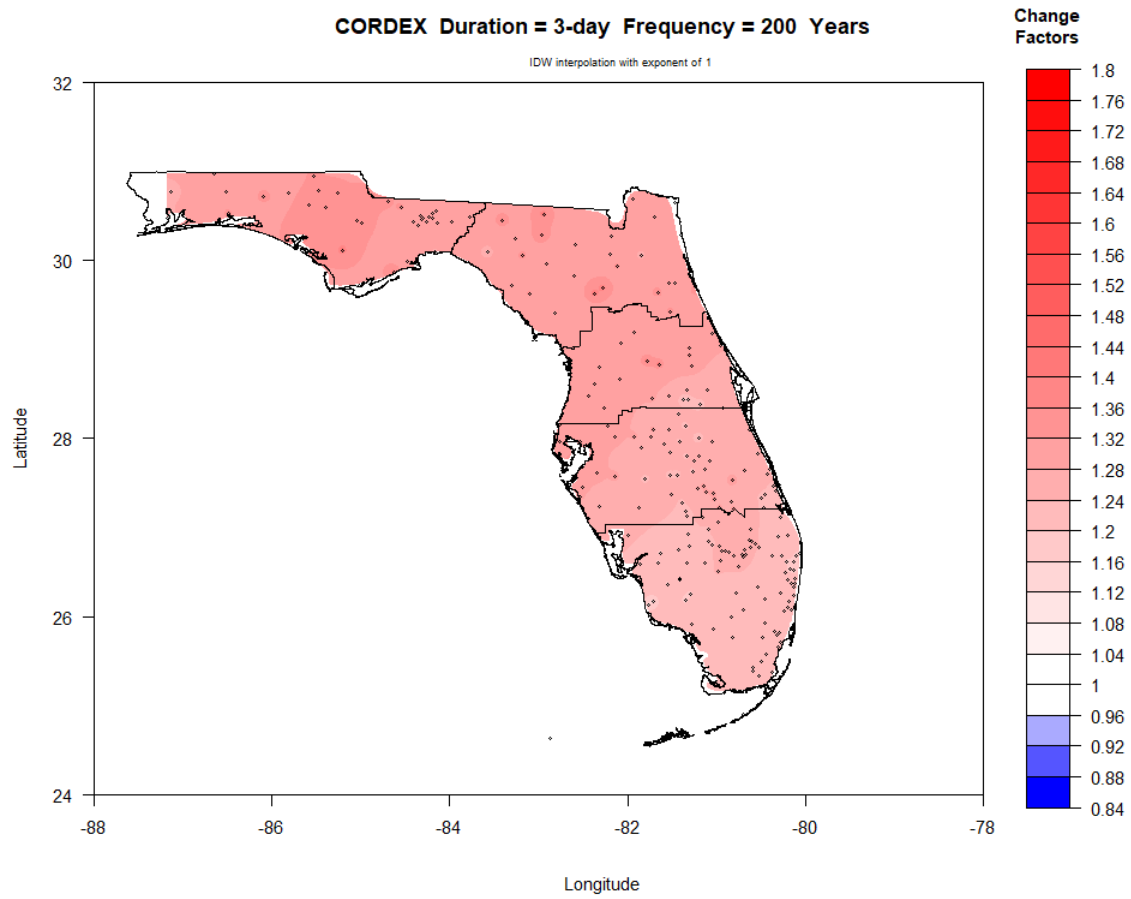
**Figure IV-9. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 25-year return period.**



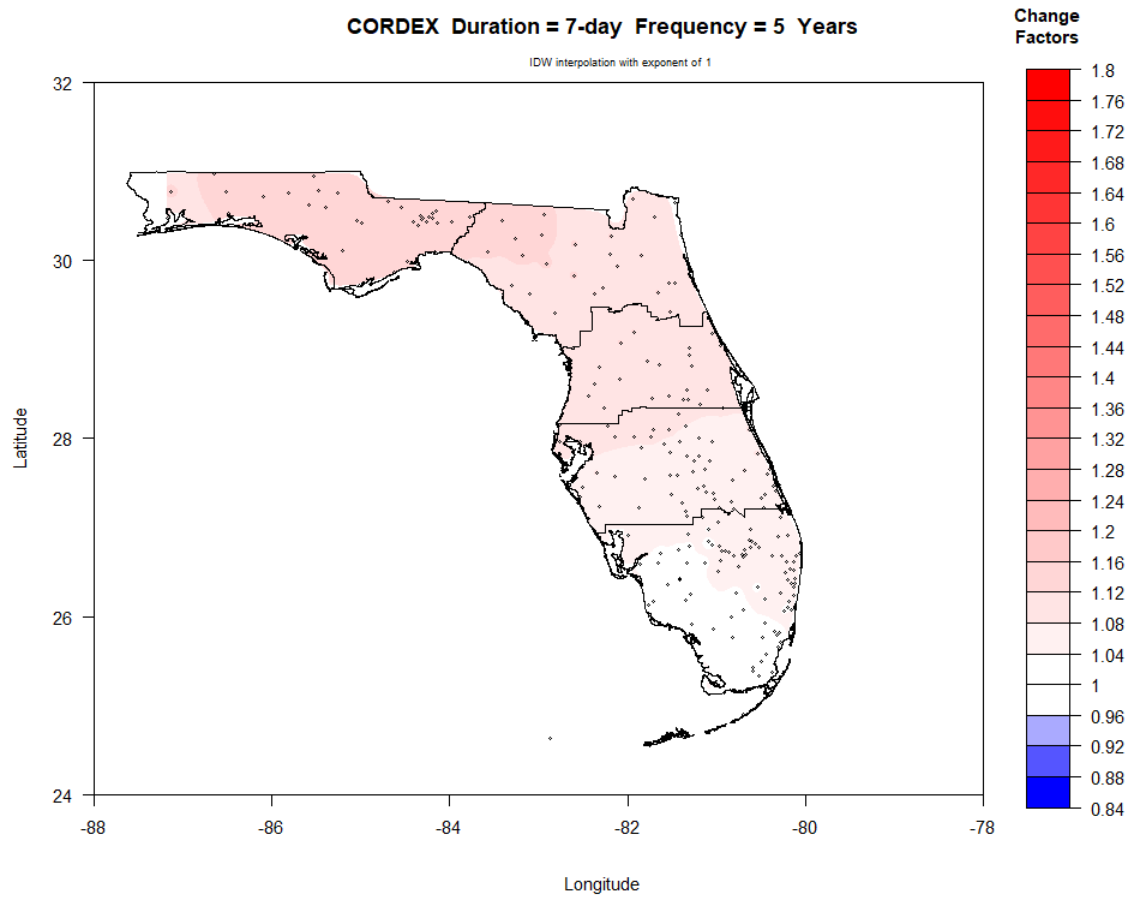
**Figure IV-10. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 50-year return period.**



**Figure IV-11. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 100-year return period.**

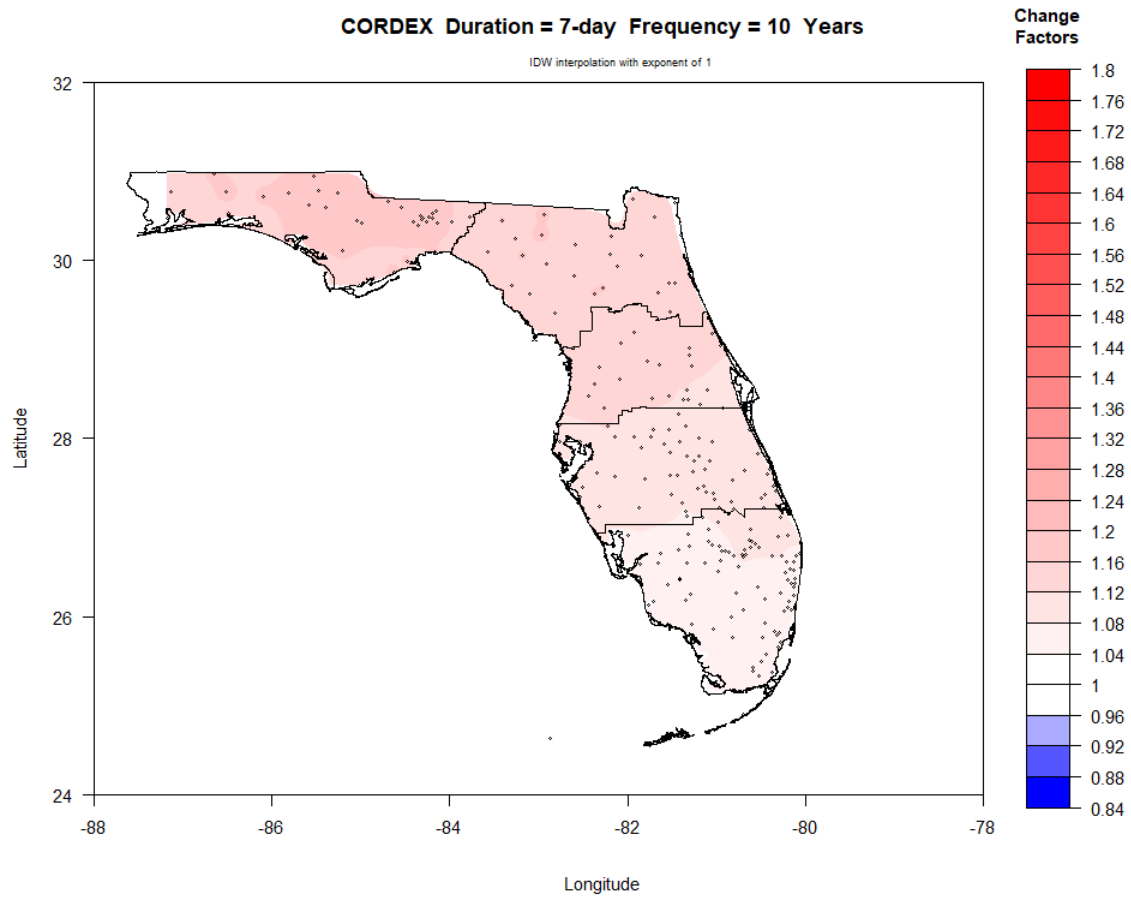


**Figure IV-12. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 200-year return period.**

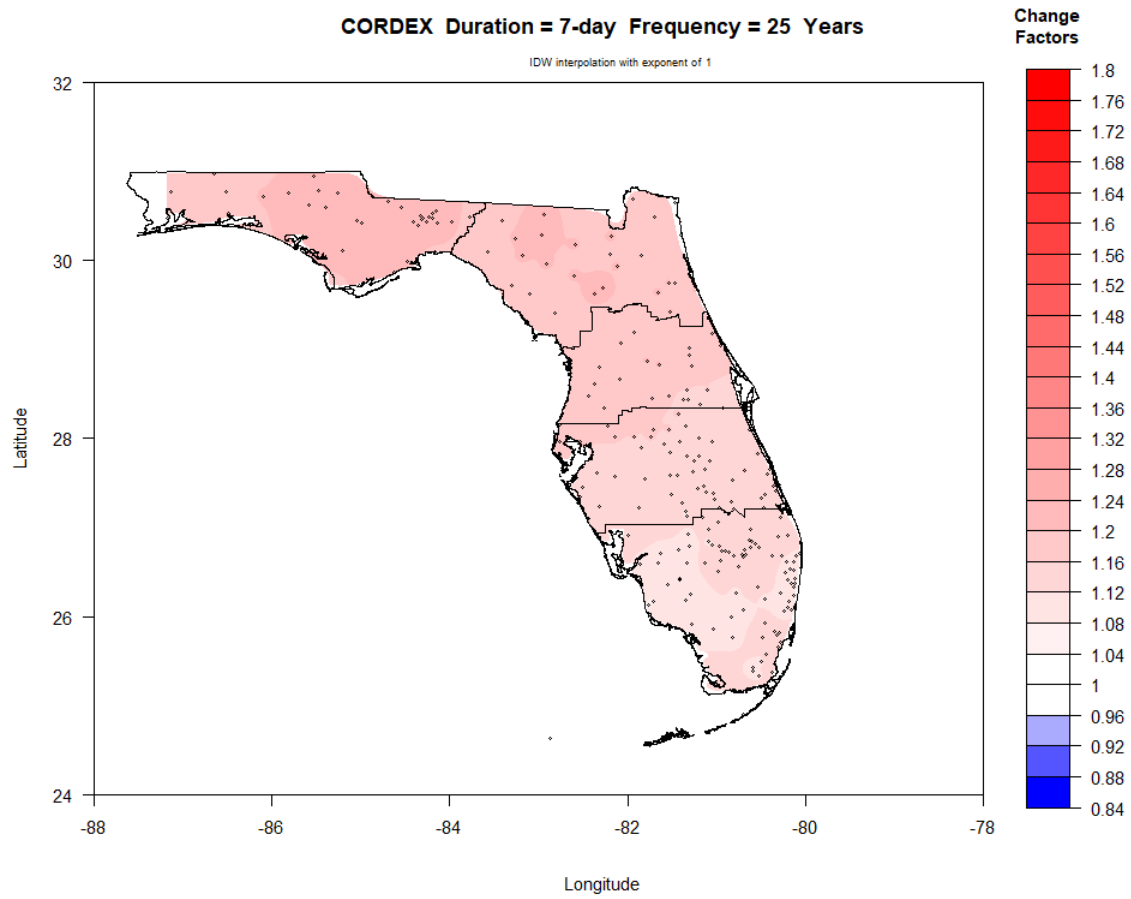


**Figure IV-13. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 5-year return period.**

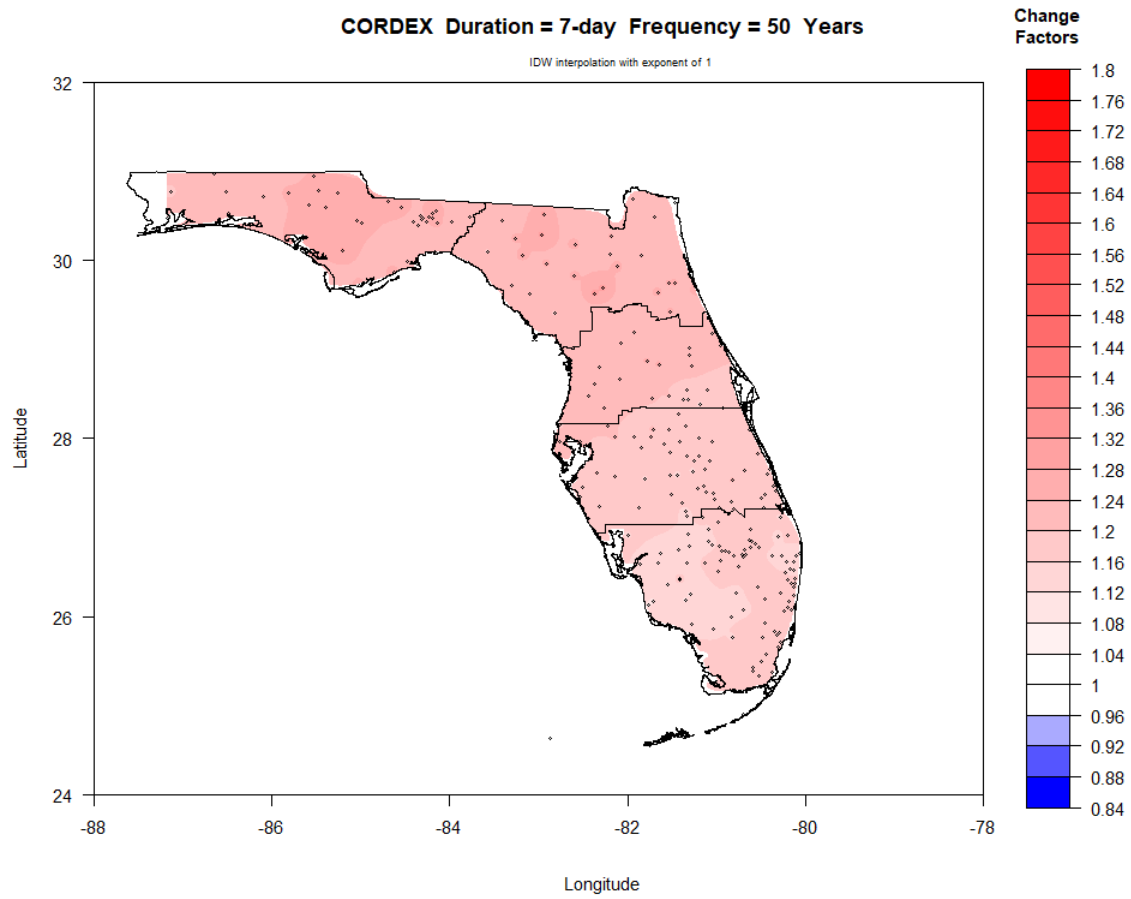




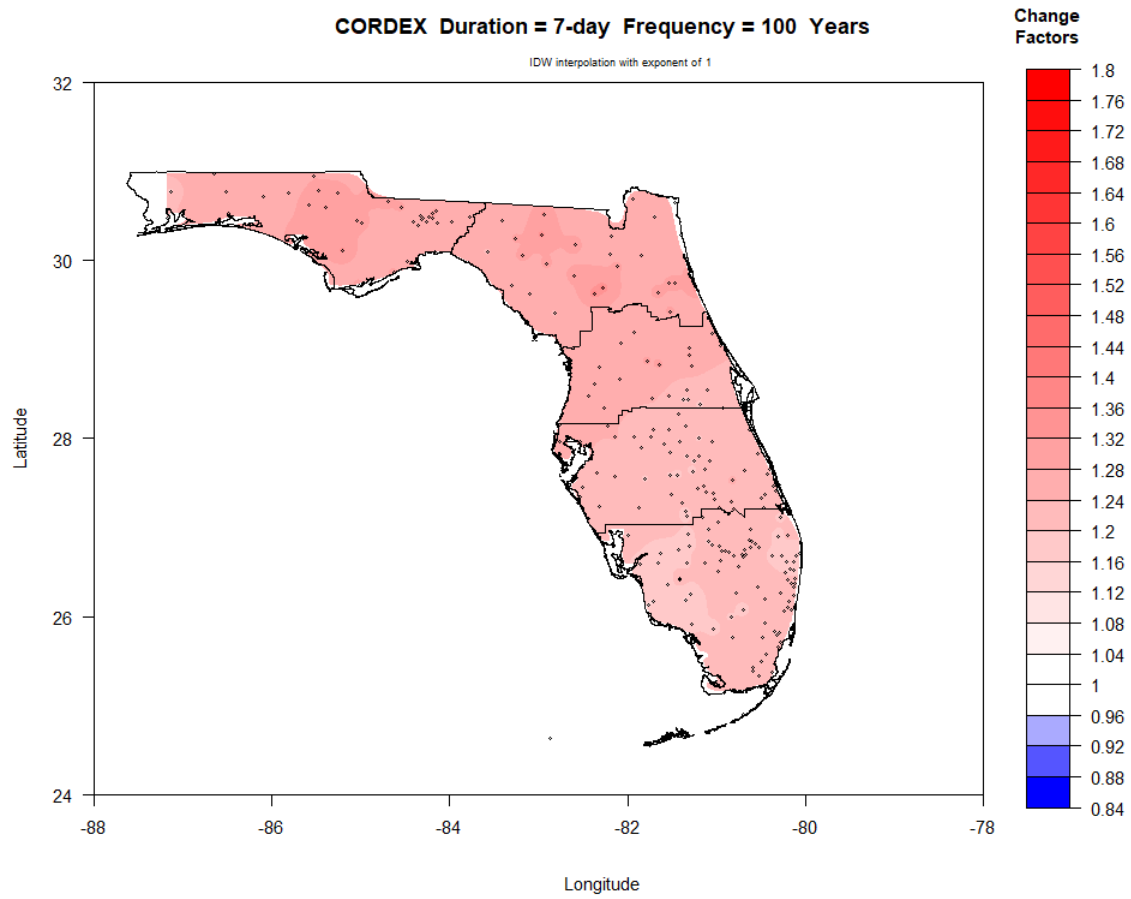
**Figure IV-14. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 10-year return period.**



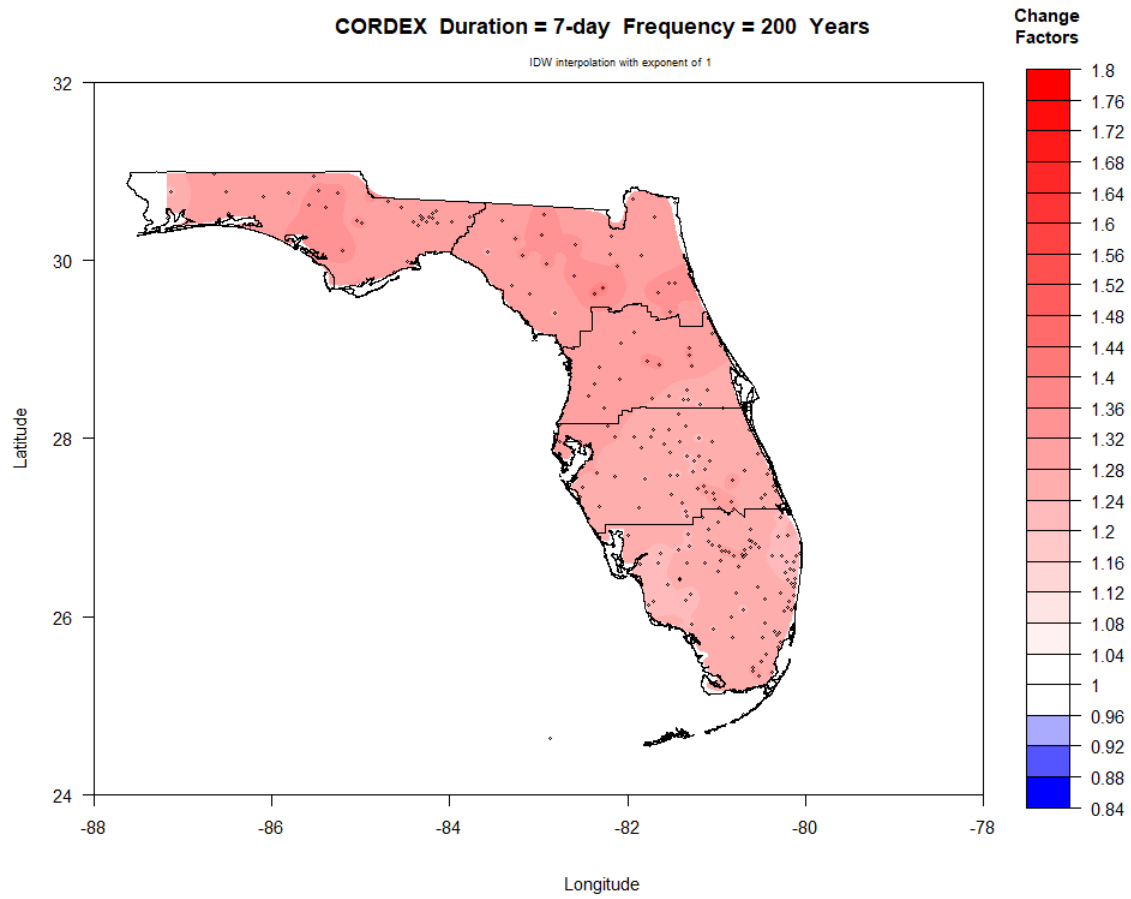
**Figure IV-15. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 25-year return period.**



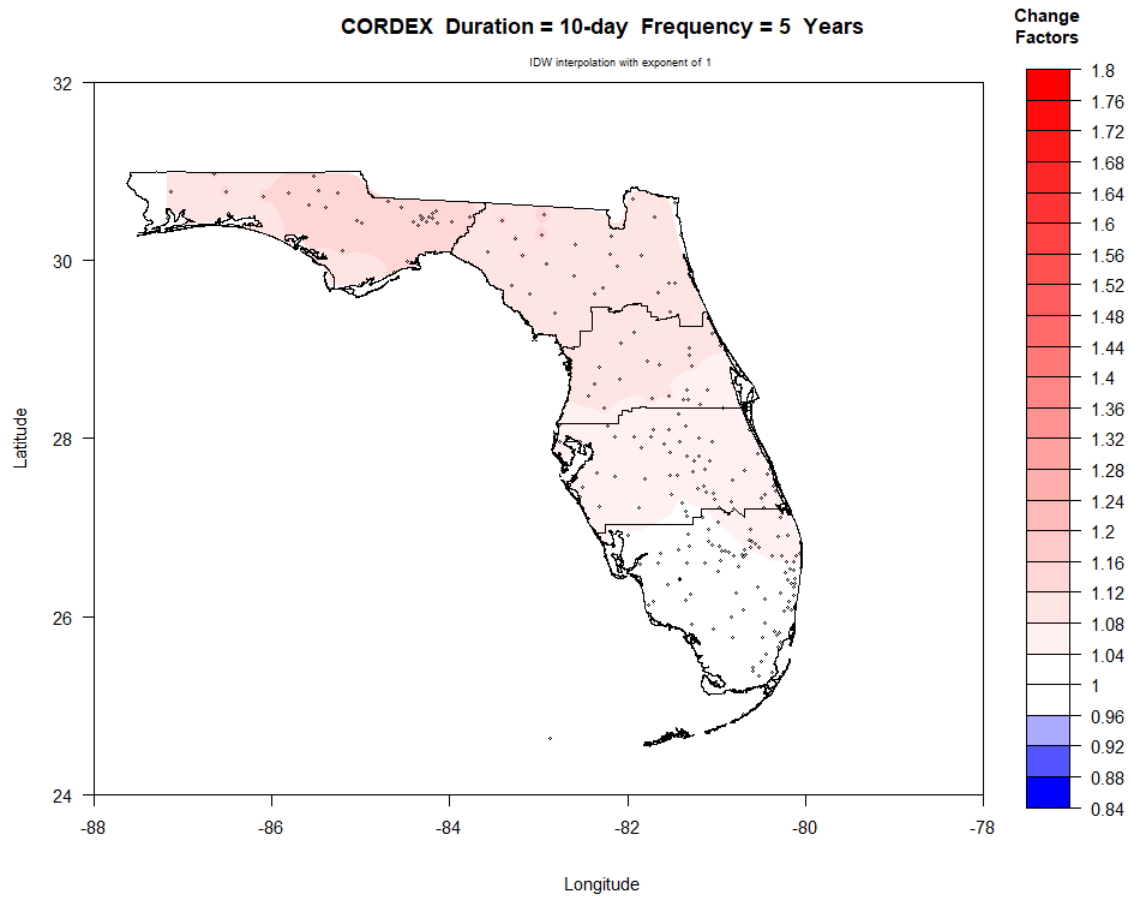
**Figure IV-16. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 50-year return period.**



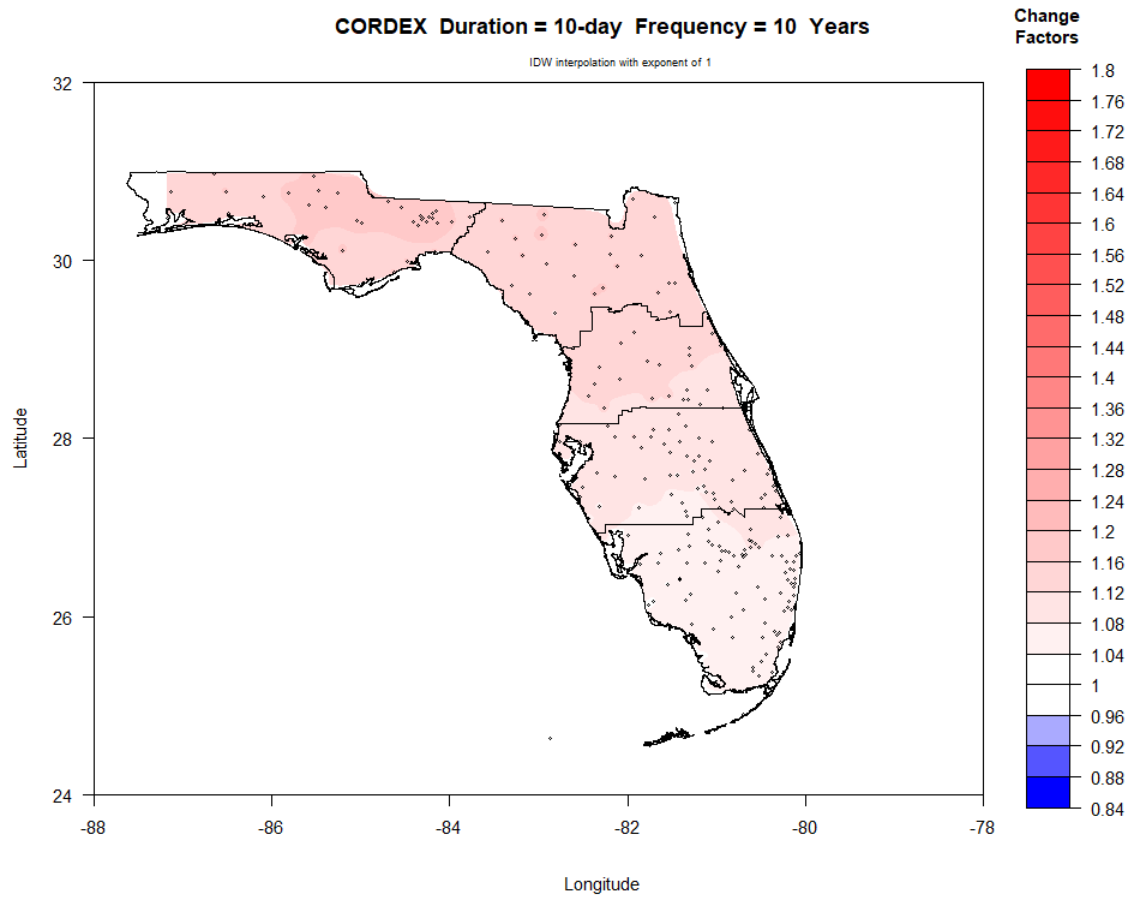
**Figure IV-17. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 100-year return period.**



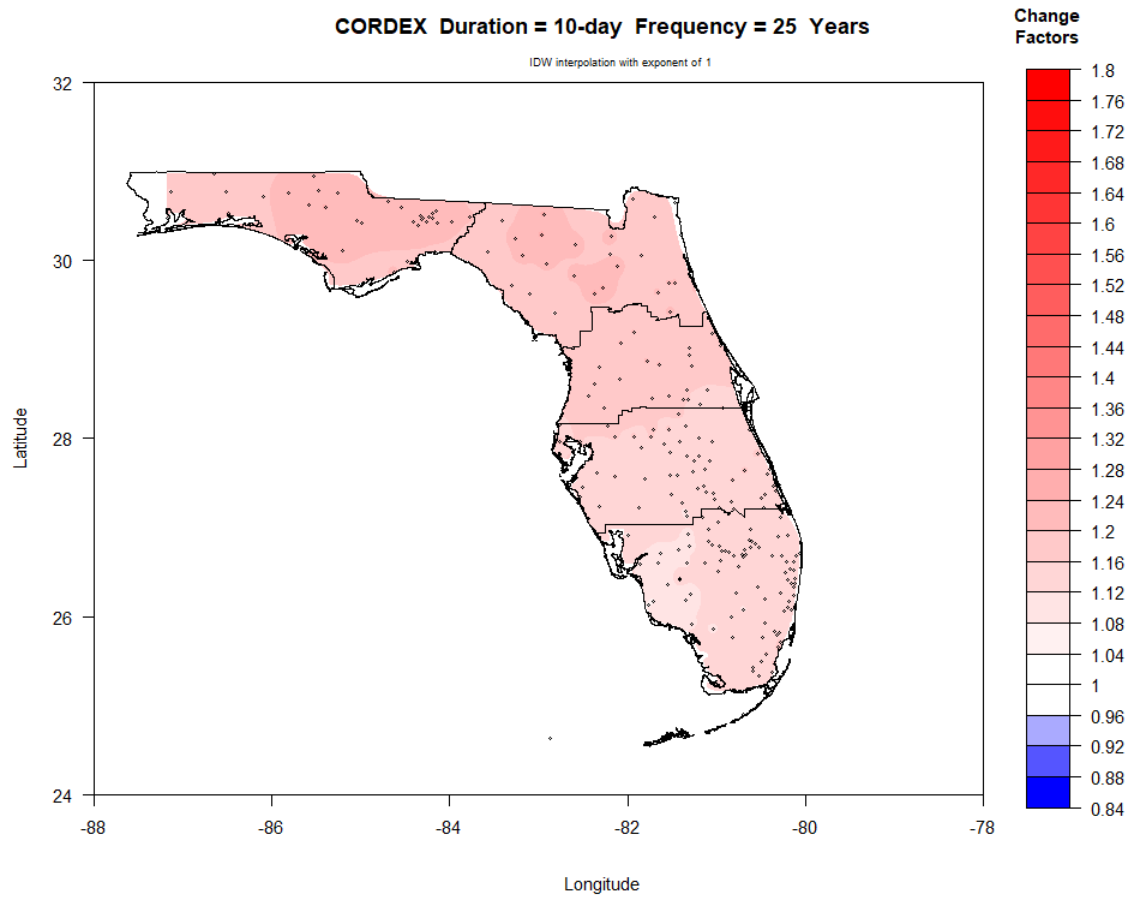
**Figure IV-18. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 200-year return period.**



**Figure IV-19. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 5-year return period.**

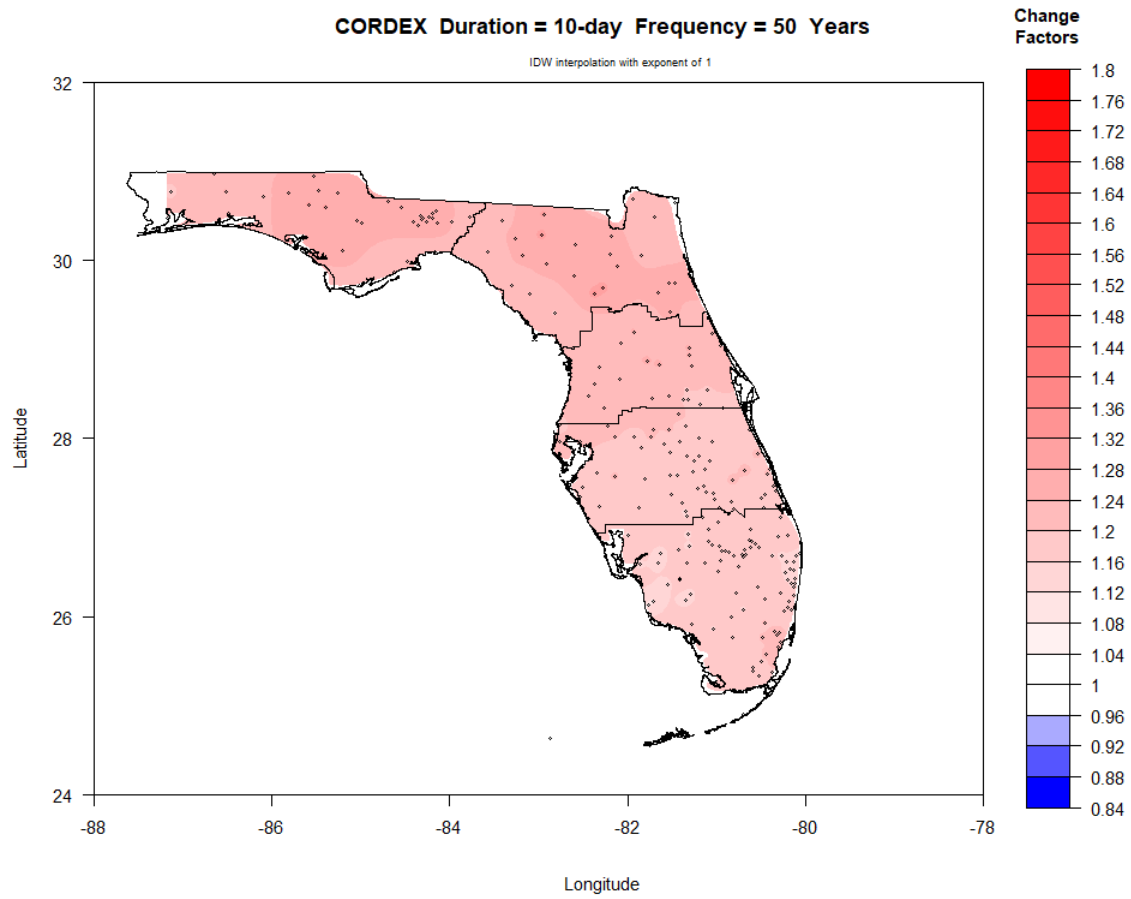


**Figure IV-20. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 10-year return period.**

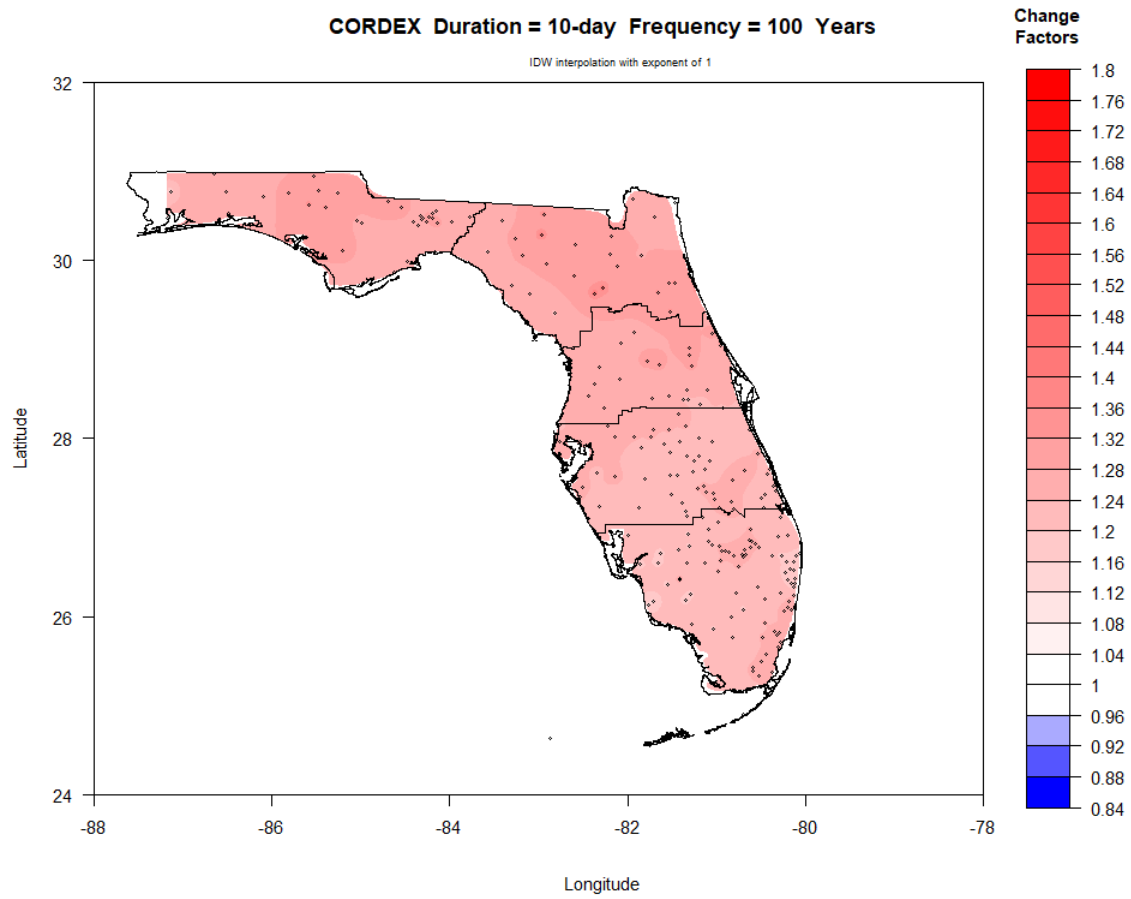


**Figure IV-21. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 25-year return period.**

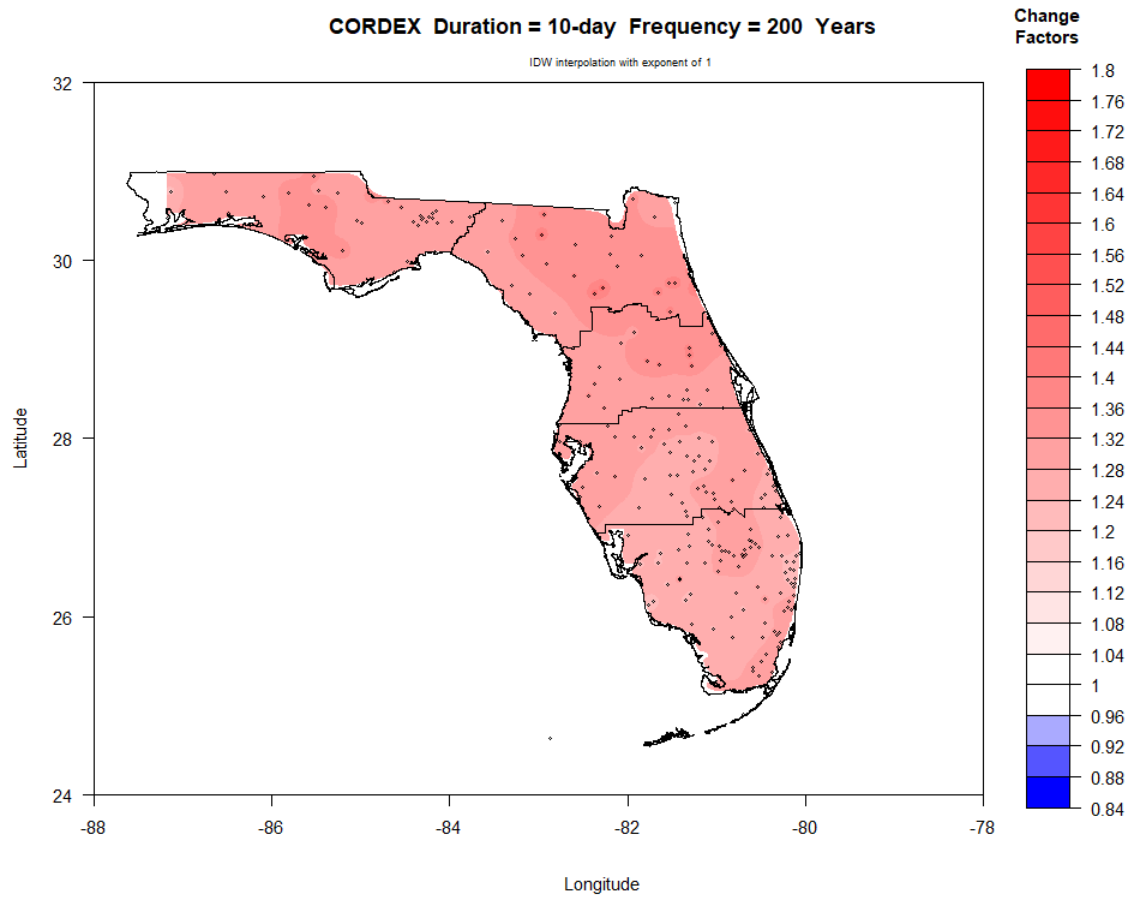




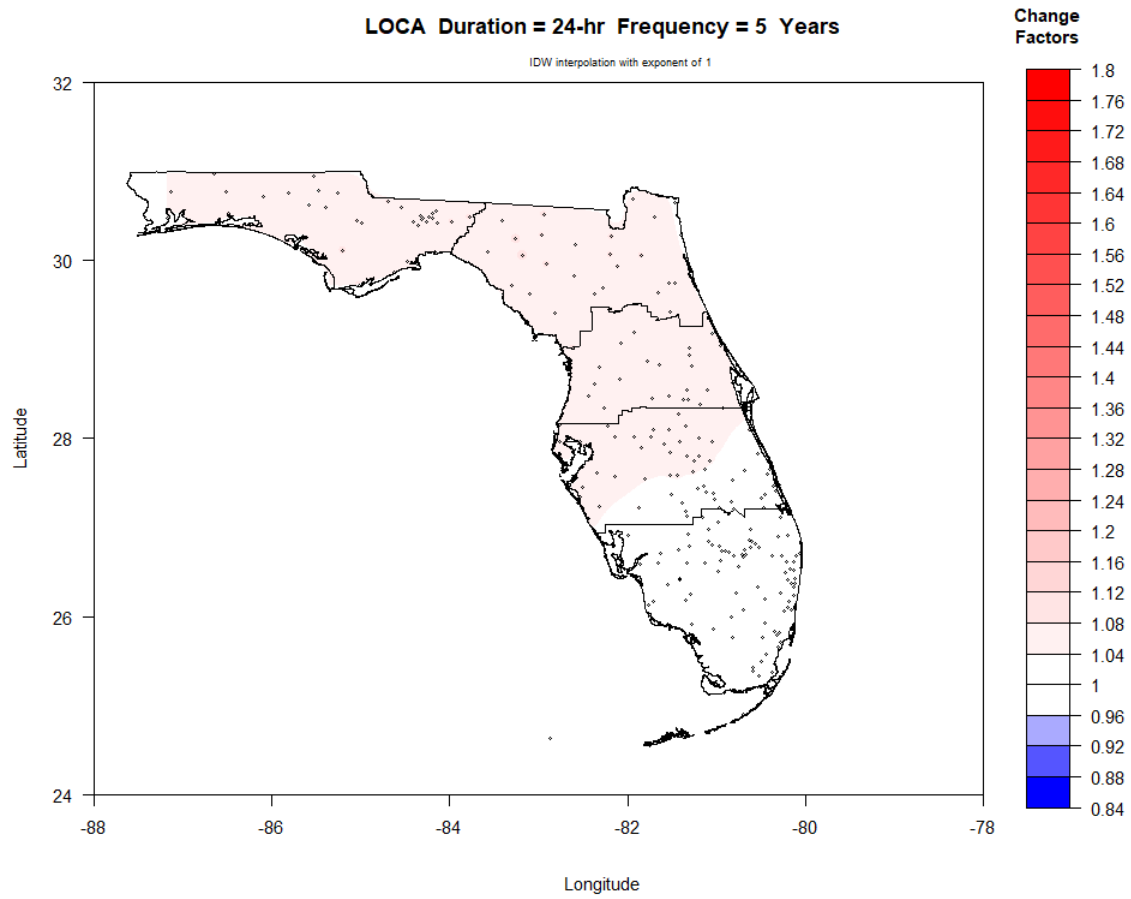
**Figure IV-22. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 50-year return period.**



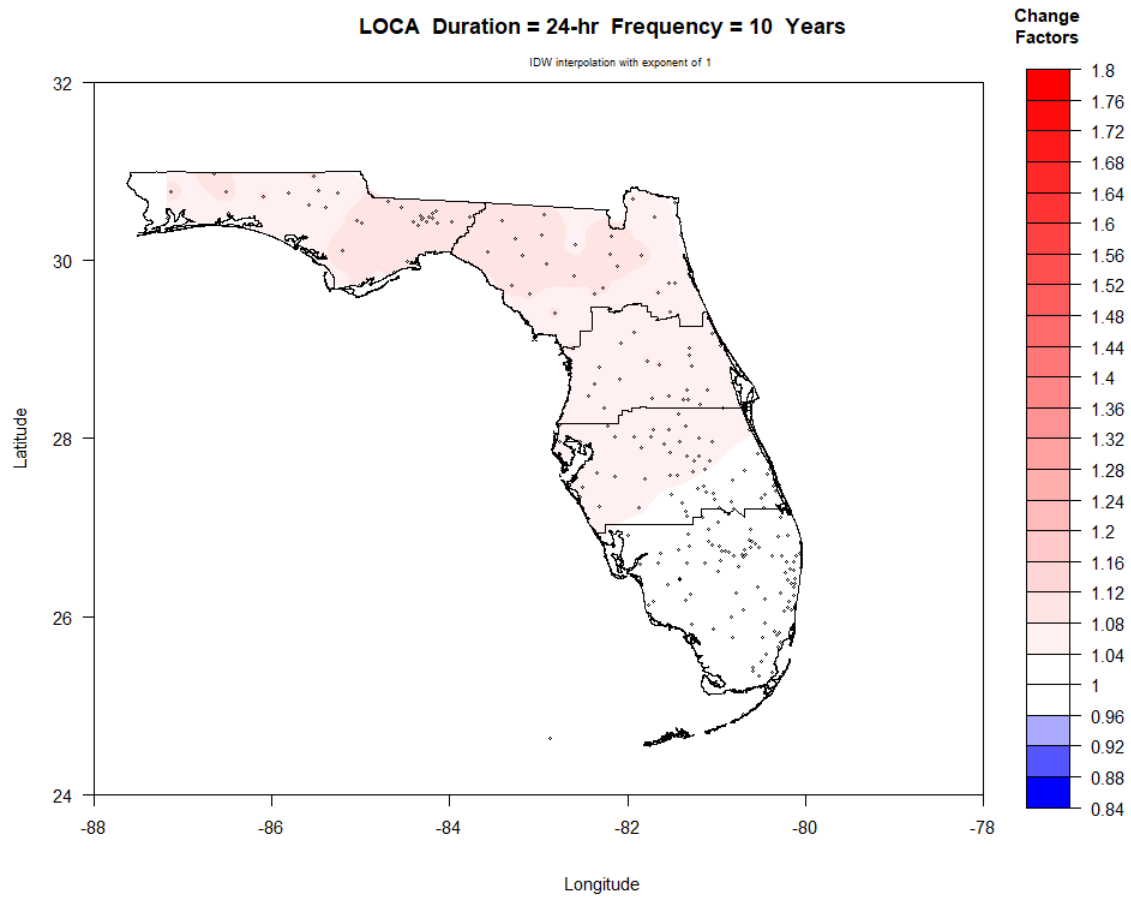
**Figure IV-23. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 100-year return period.**



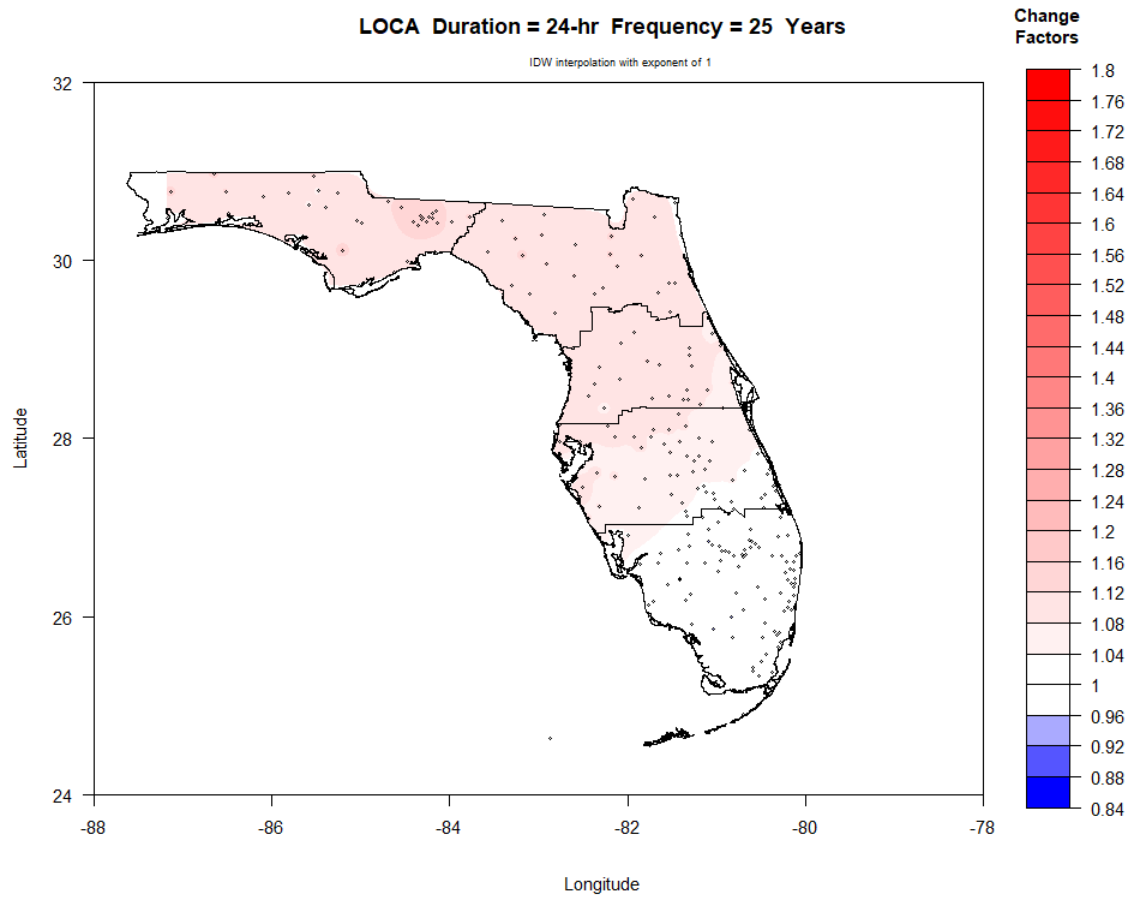
**Figure IV-24. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 200-year return period.**



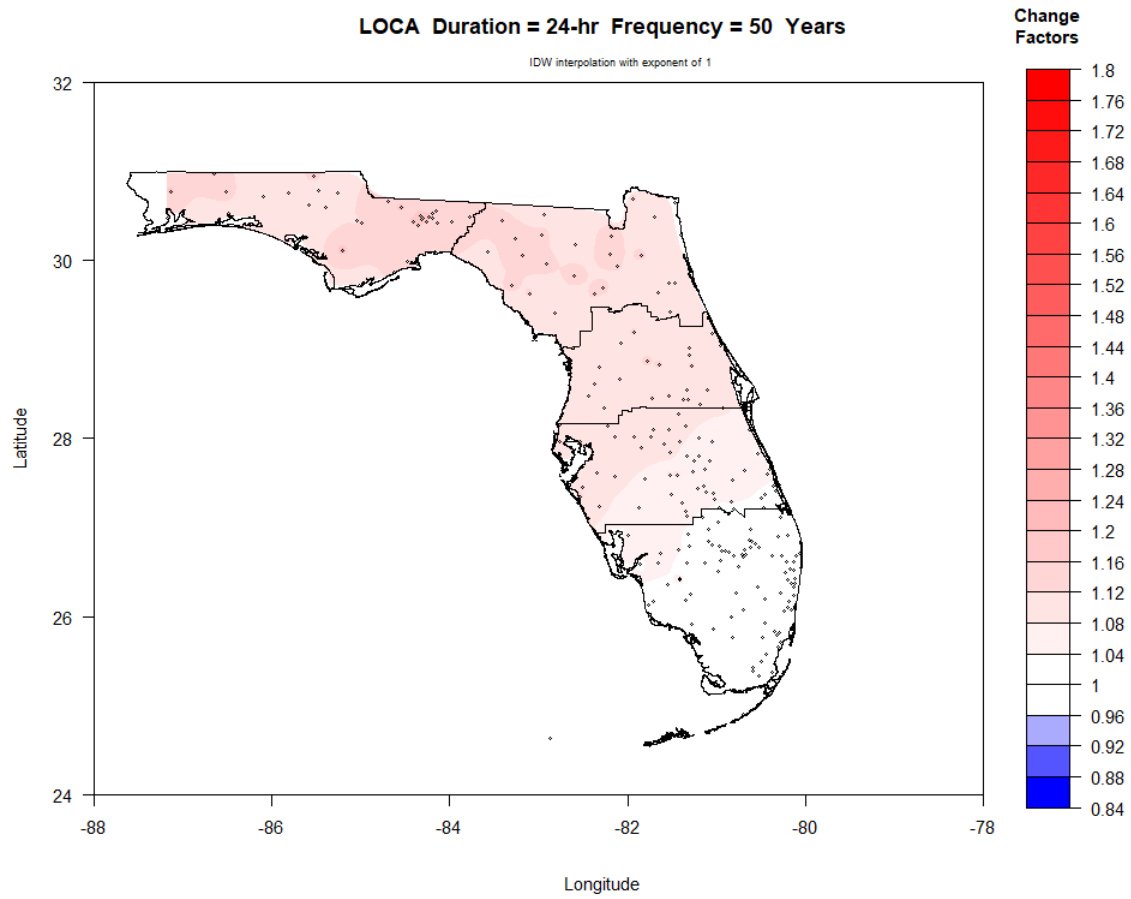
**Figure IV-25. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 5-year return period.**



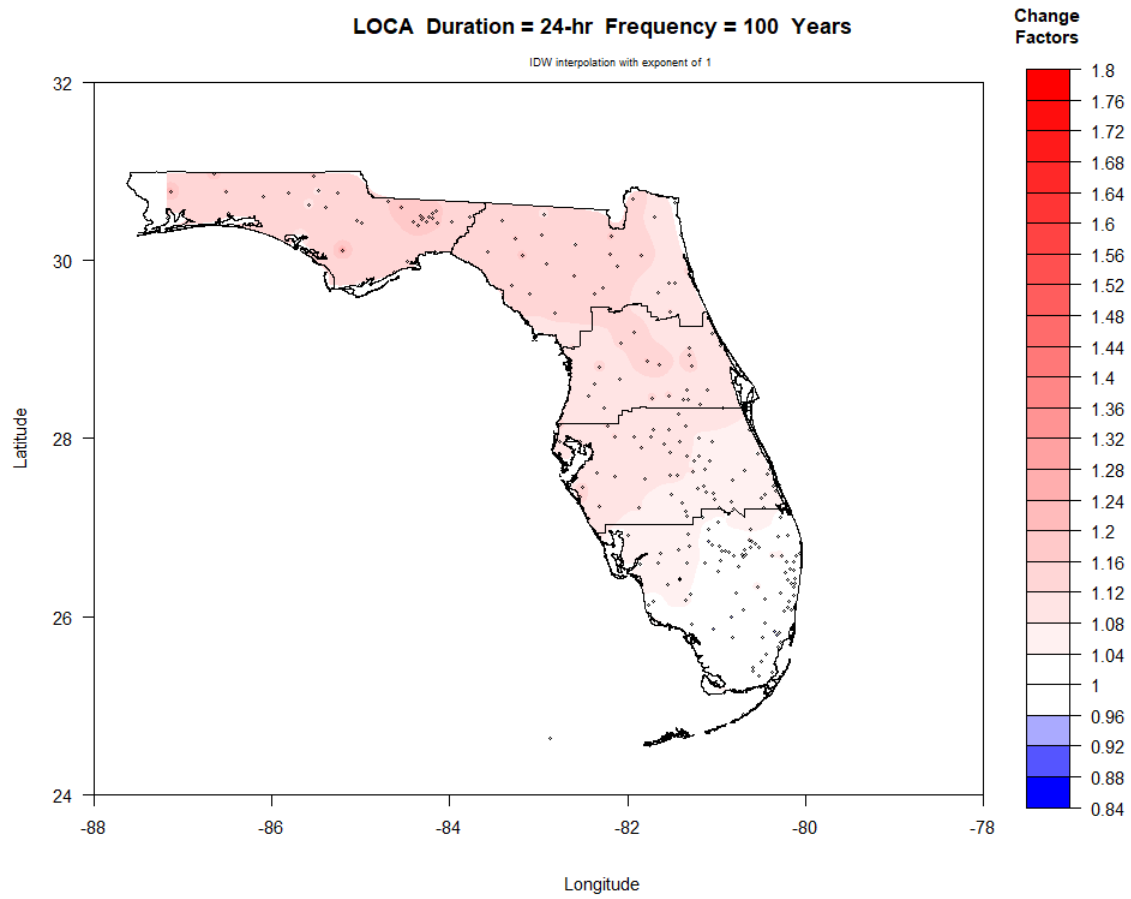
**Figure IV-26. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 10-year return period.**



**Figure IV-27. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 25-year return period.**

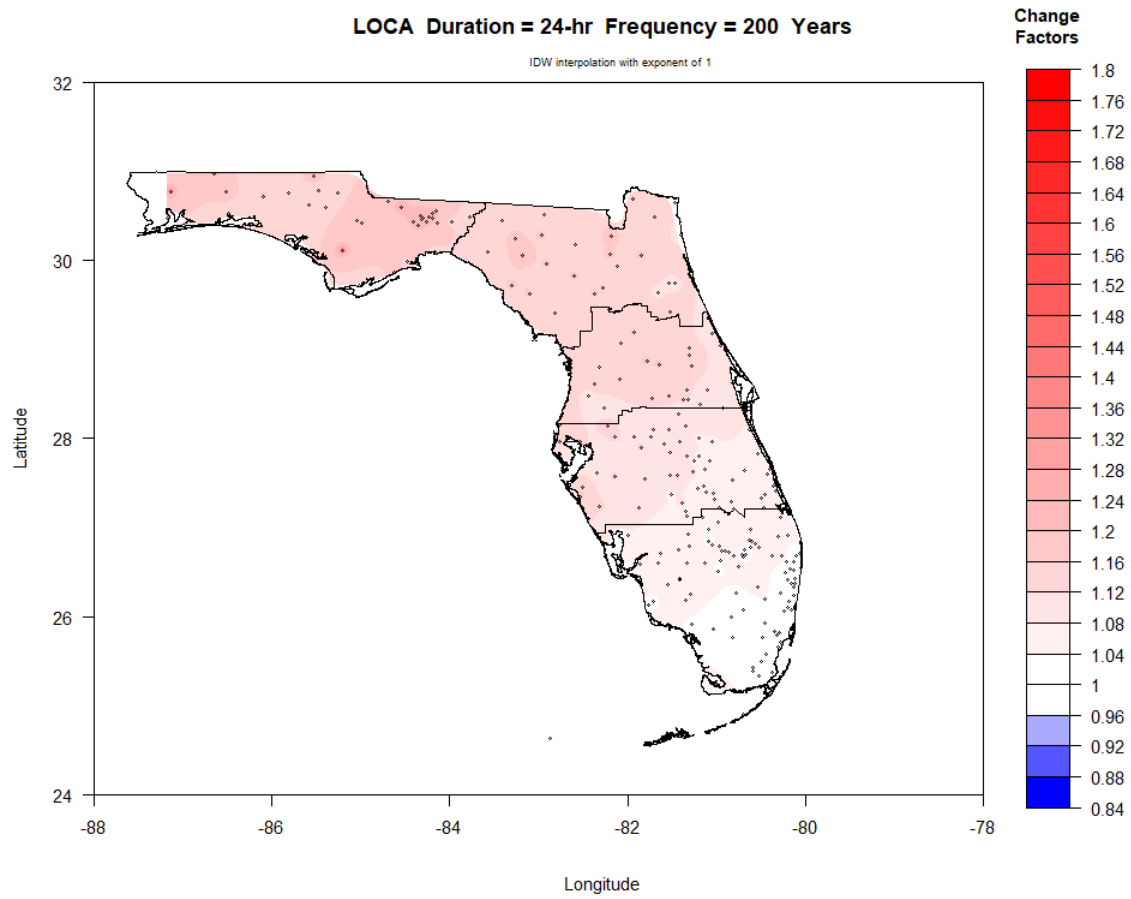


**Figure IV-28. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 50-year return period.**

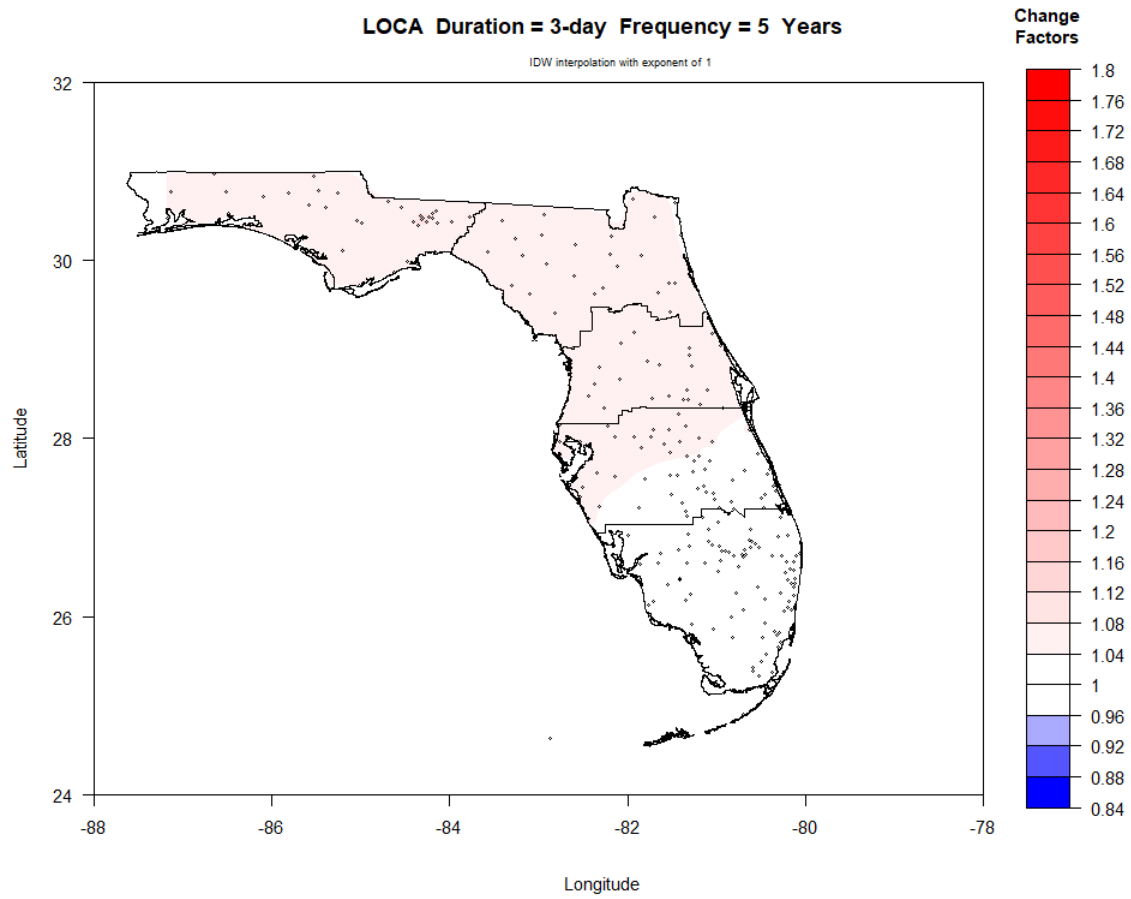


**Figure IV-29. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 100-year return period.**

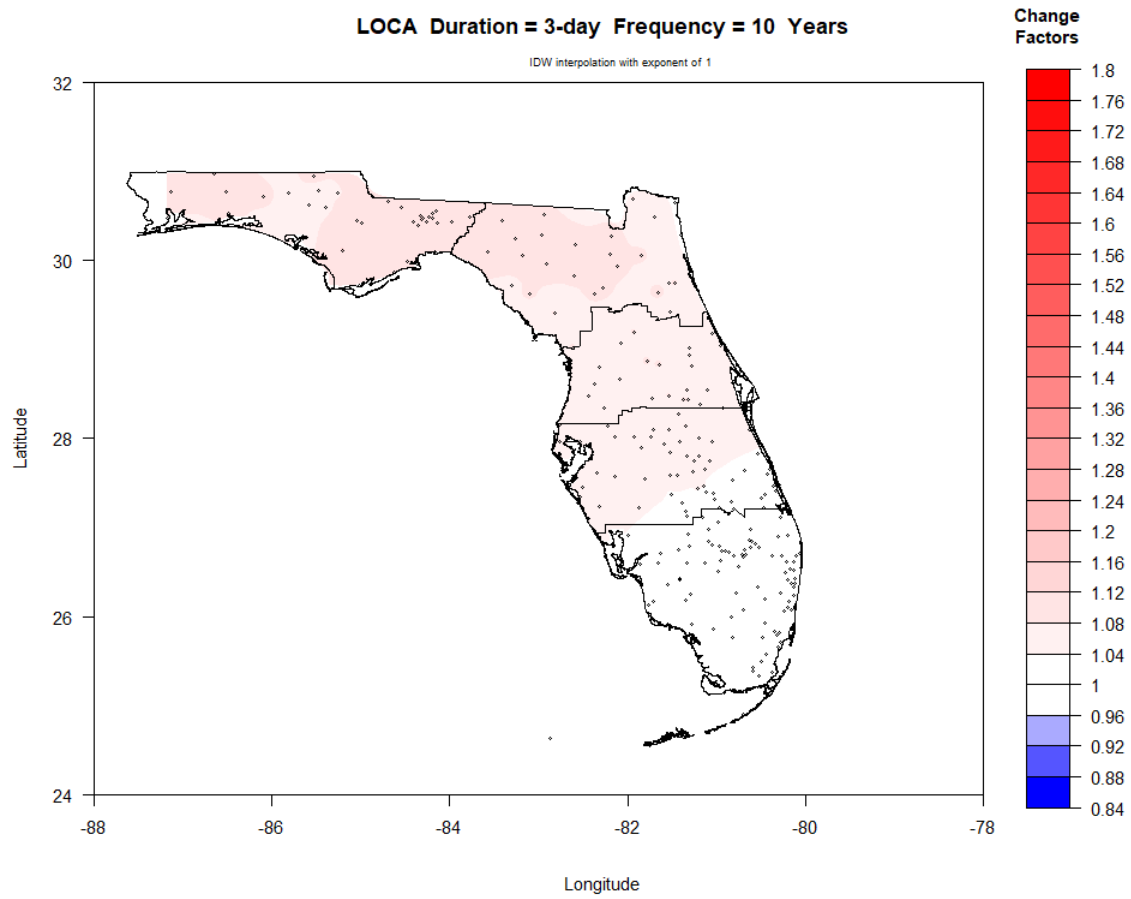




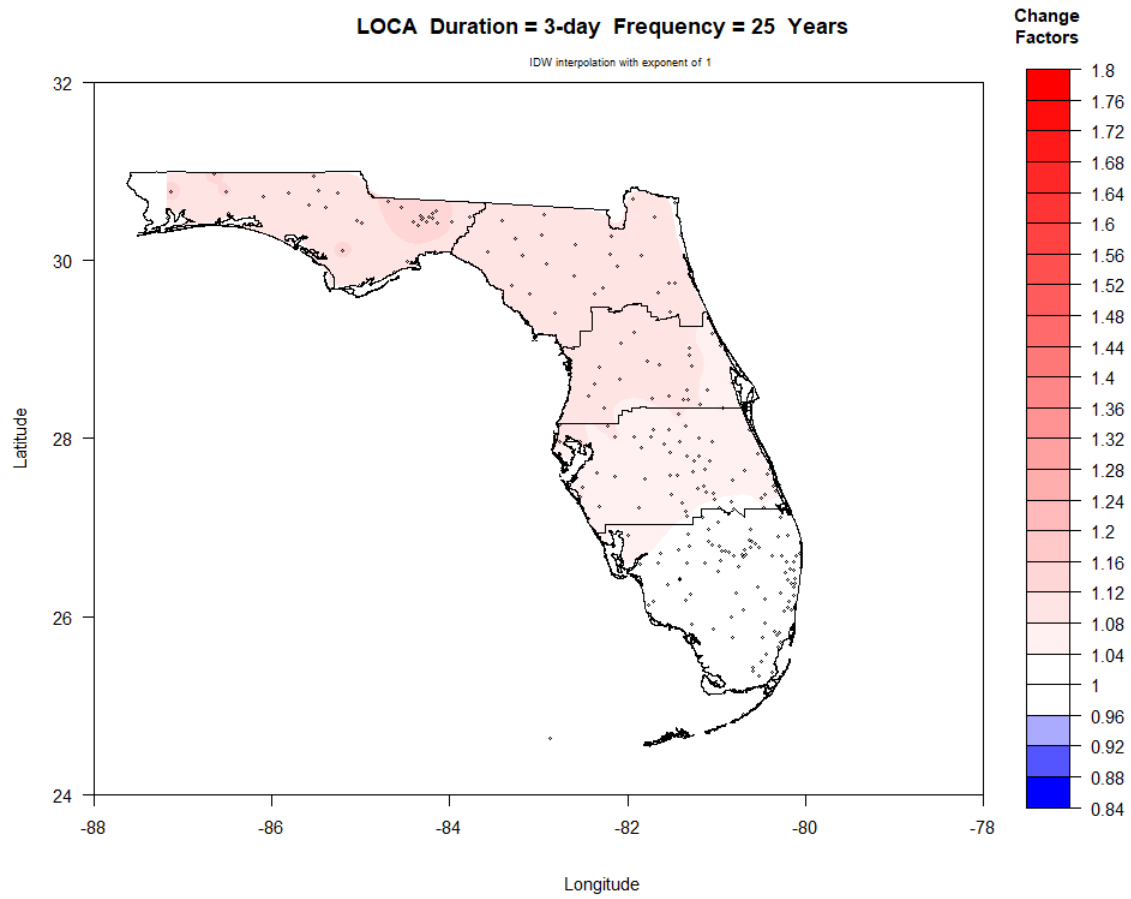
**Figure IV-30. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 200-year return period.**



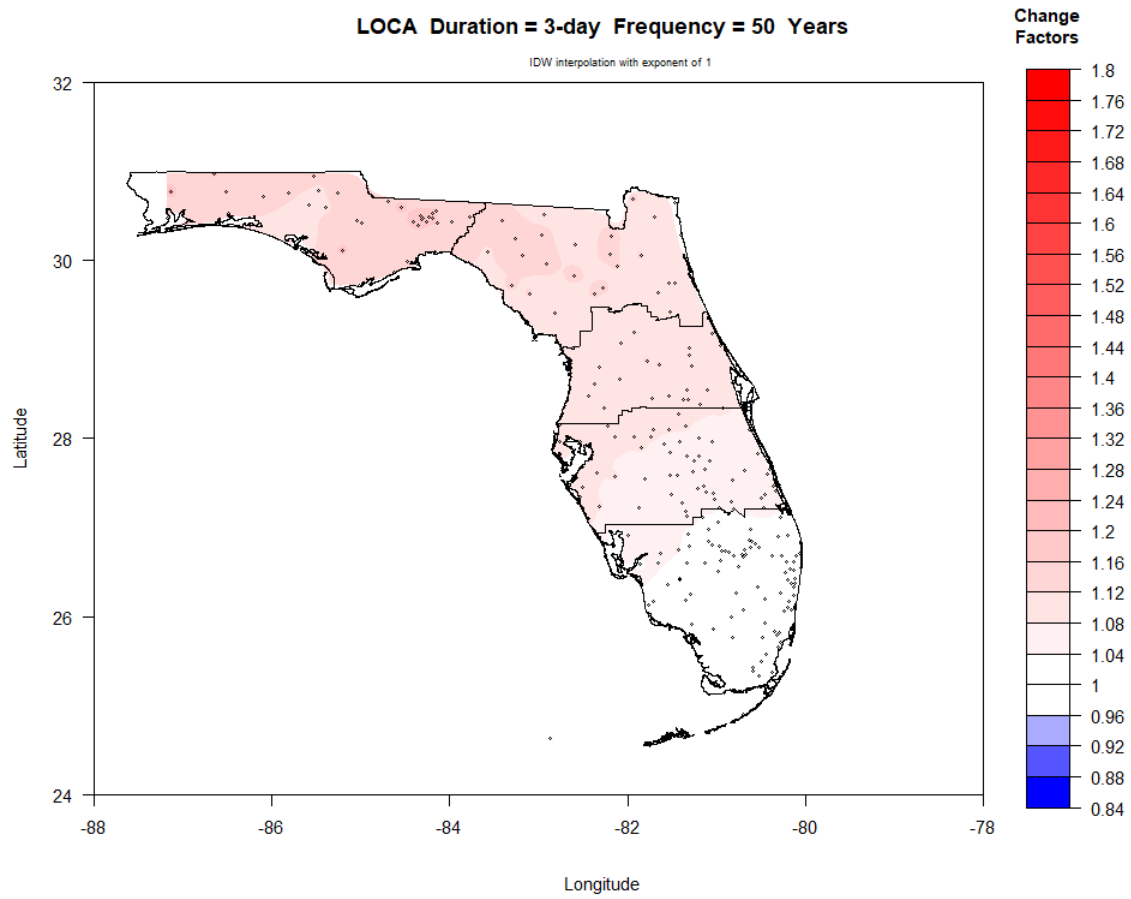
**Figure IV-31. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 5-year return period.**



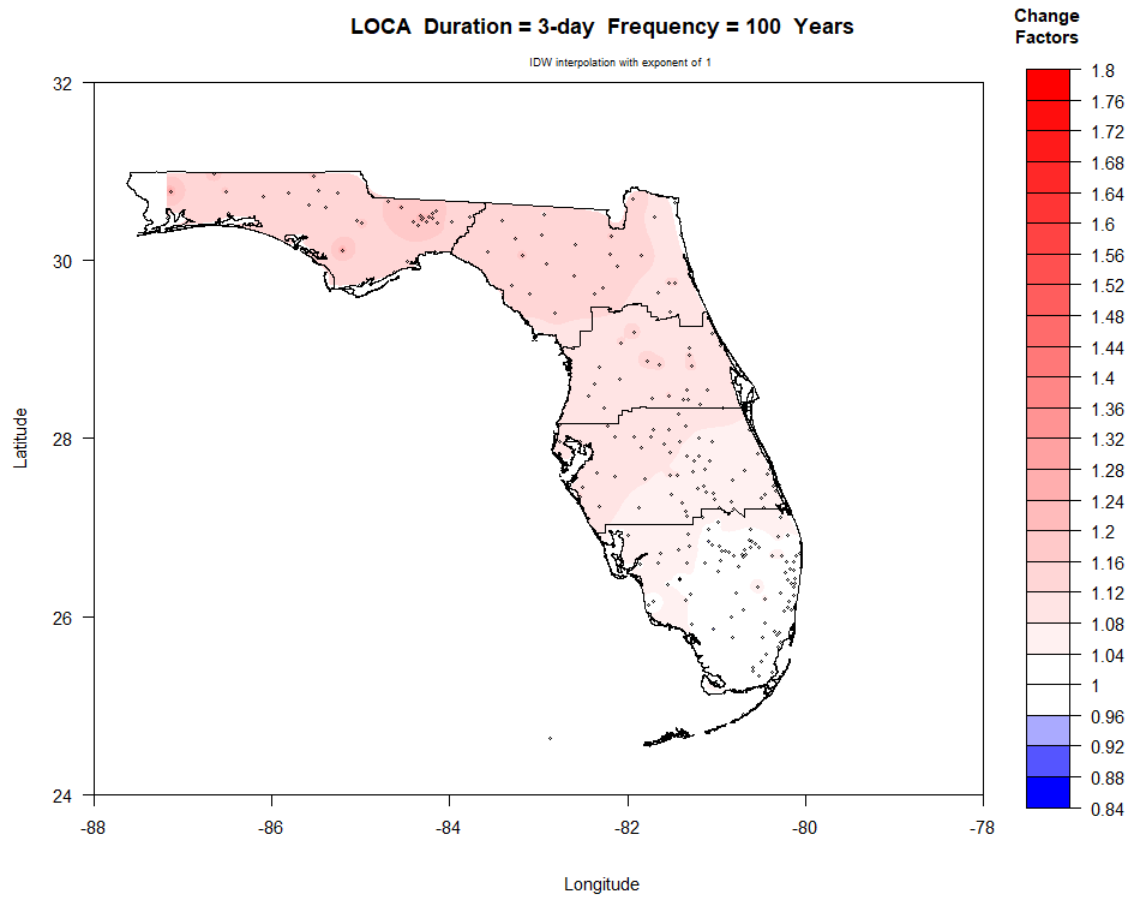
**Figure IV-32. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 10-year return period.**



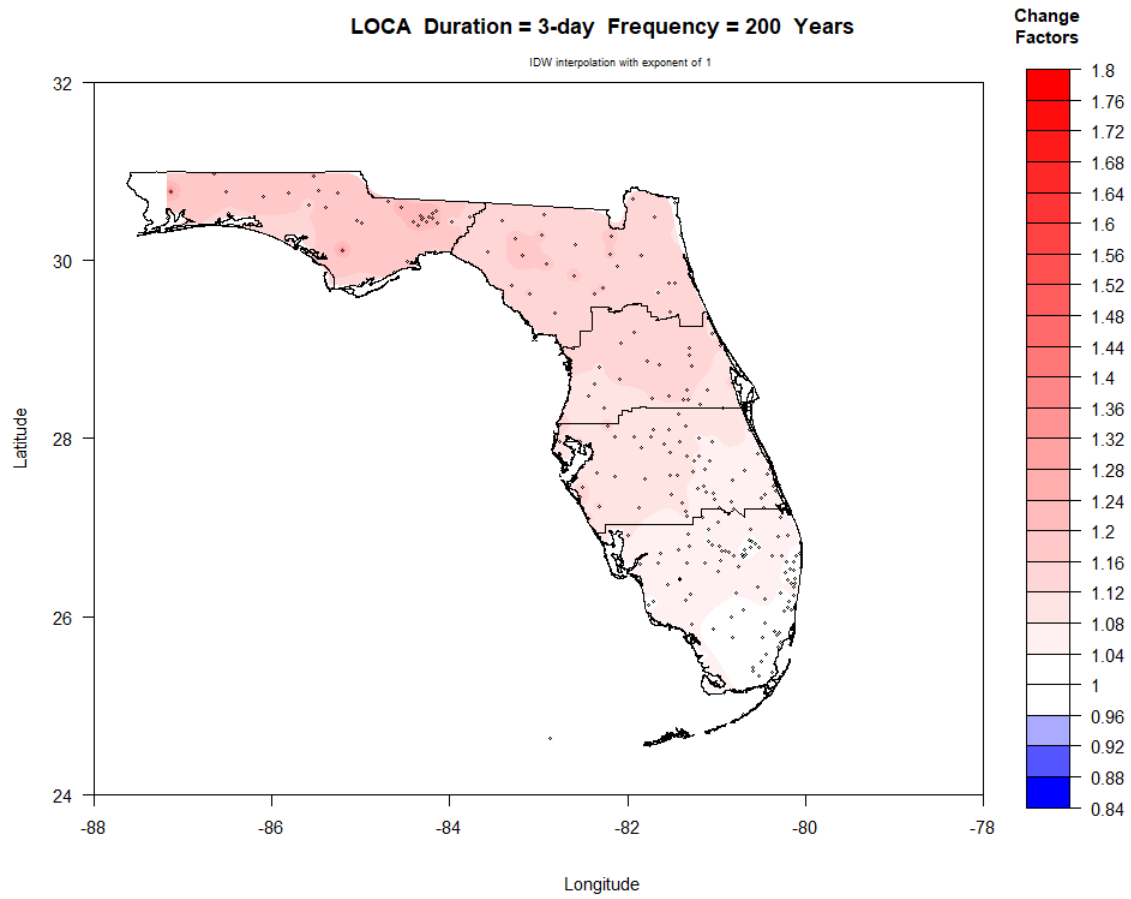
**Figure IV-33. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 25-year return period.**



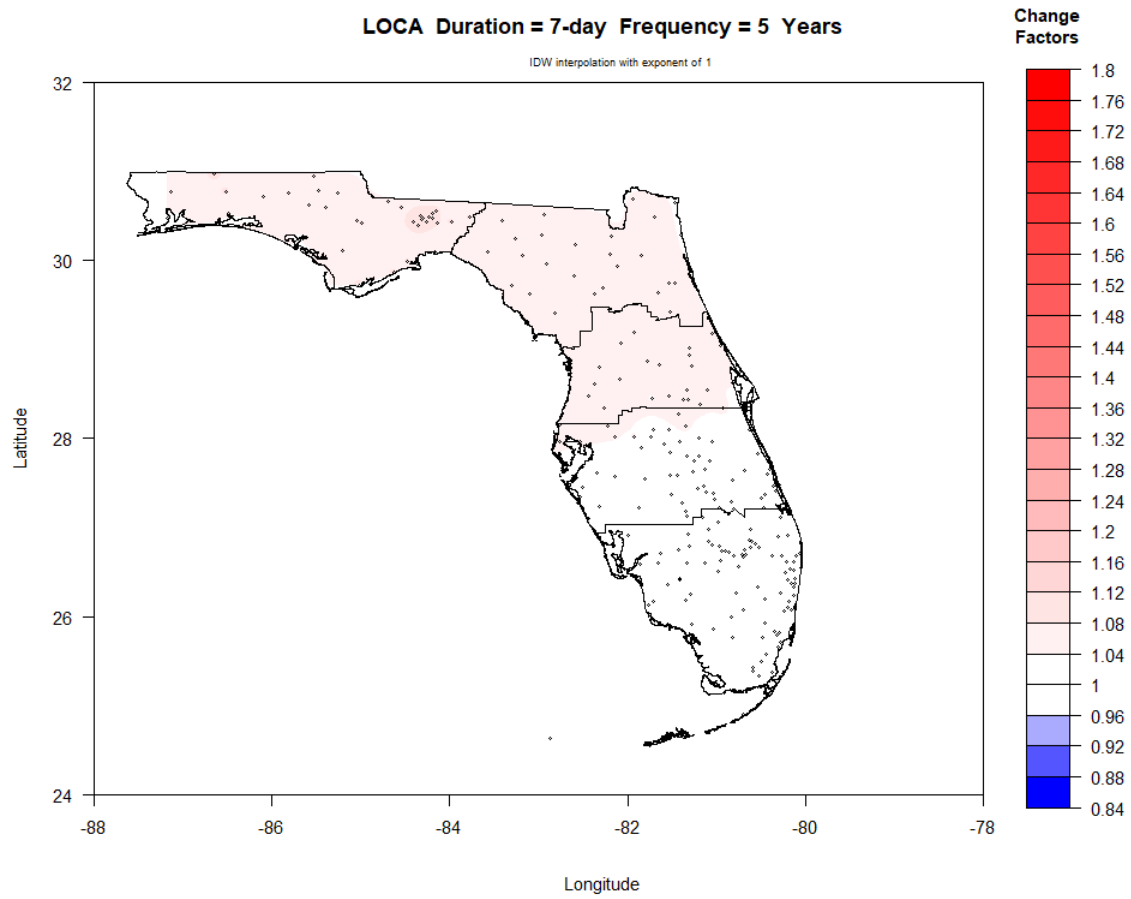
**Figure IV-34. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 50-year return period.**



**Figure IV-35. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 100-year return period.**

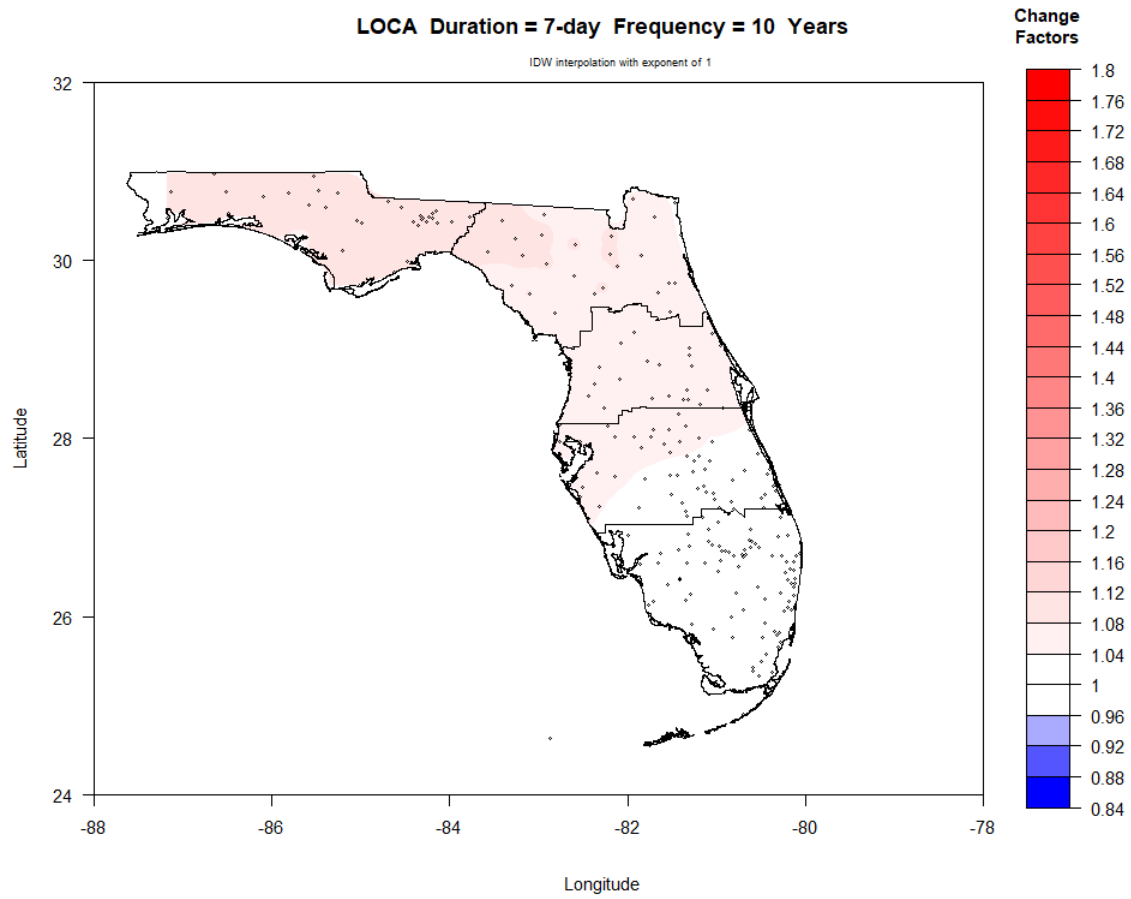


**Figure IV-36. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 200-year return period.**

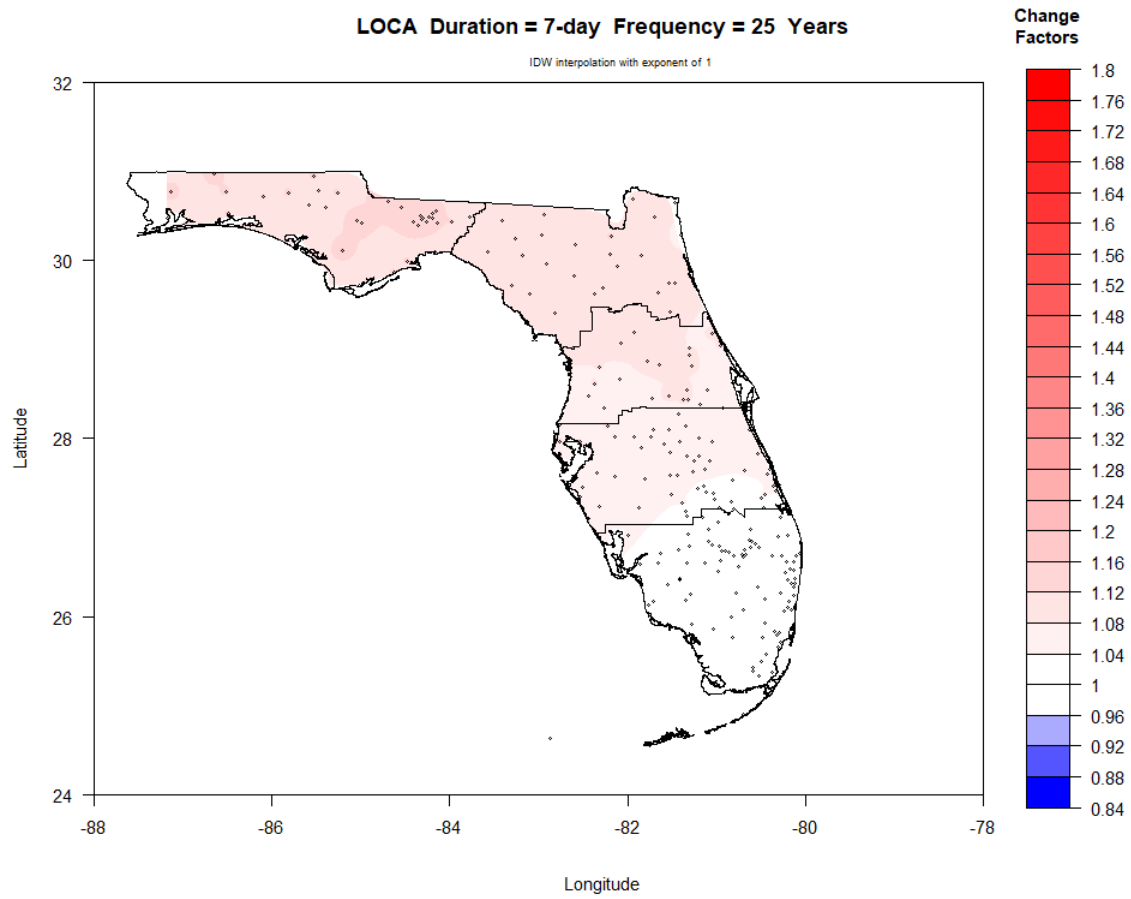


**Figure IV-37. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 5-year return period.**

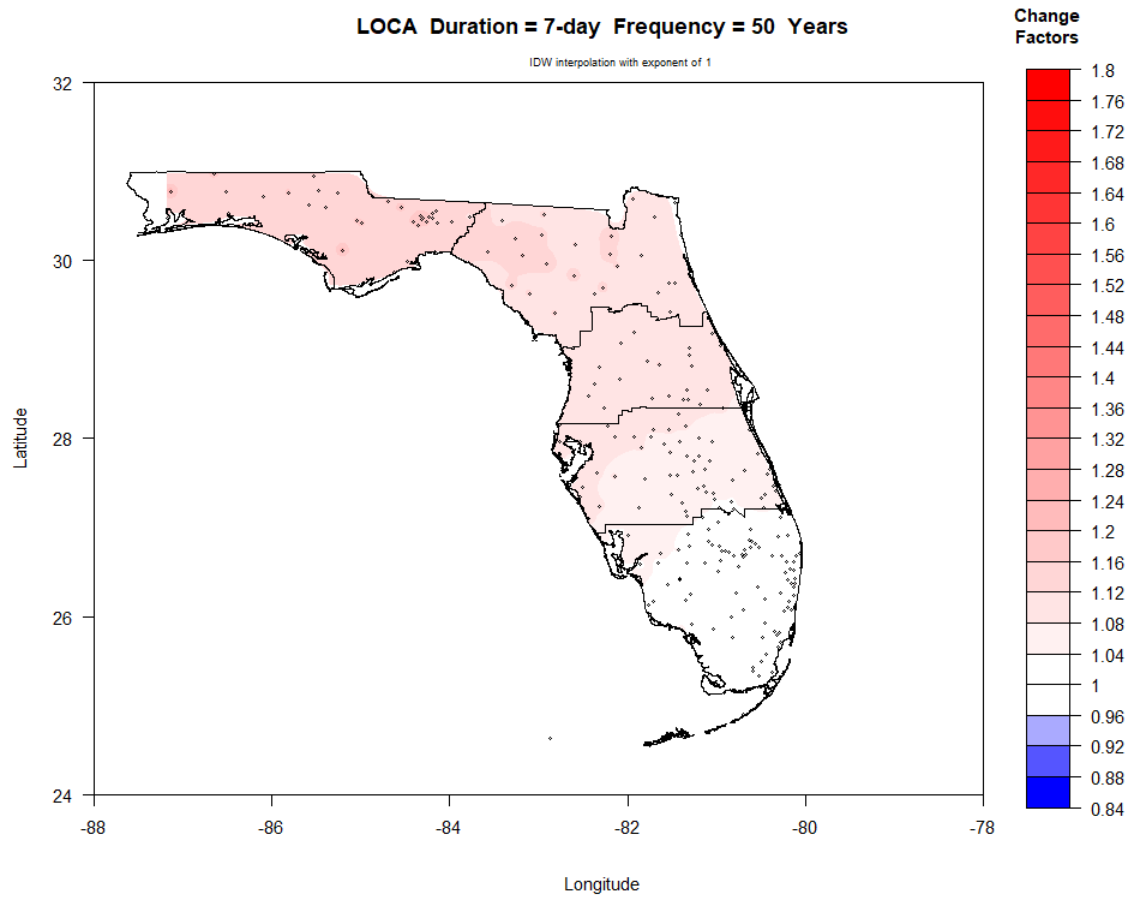




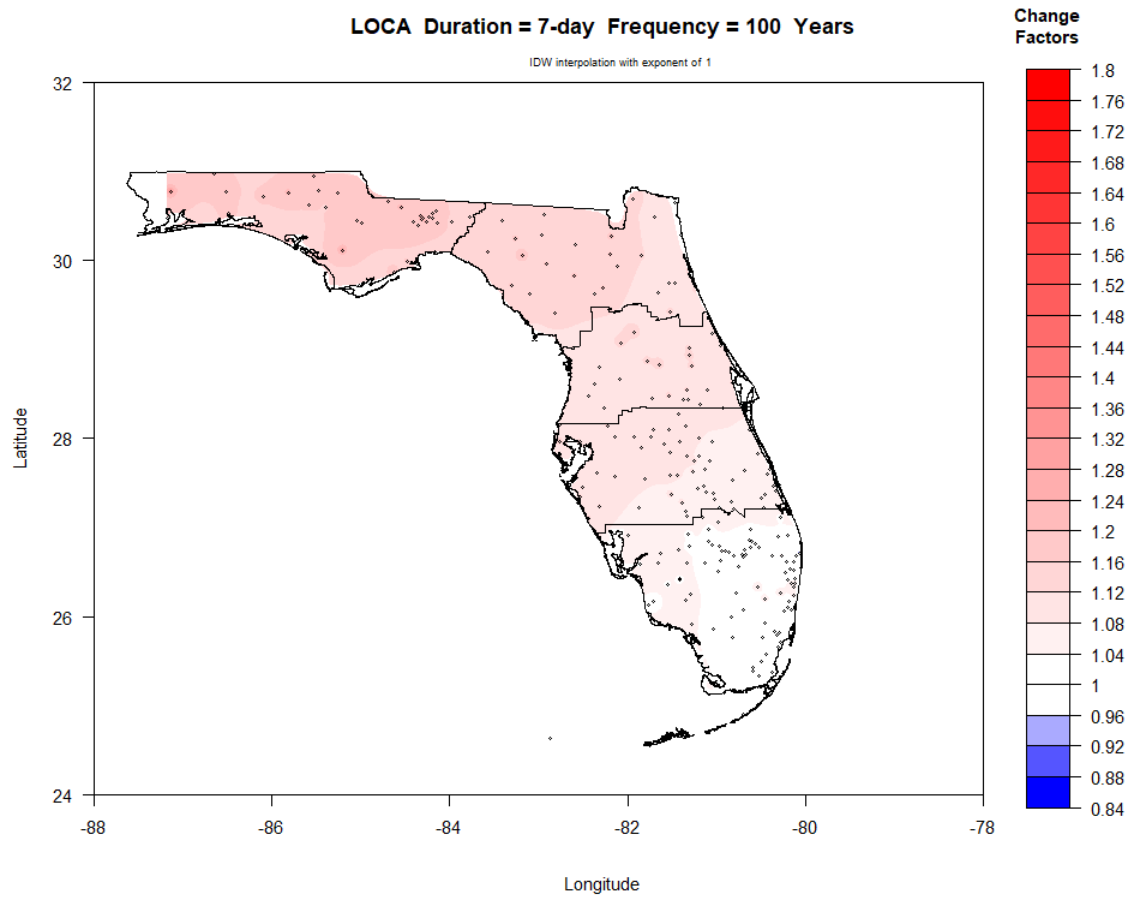
**Figure IV-38. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 10-year return period.**



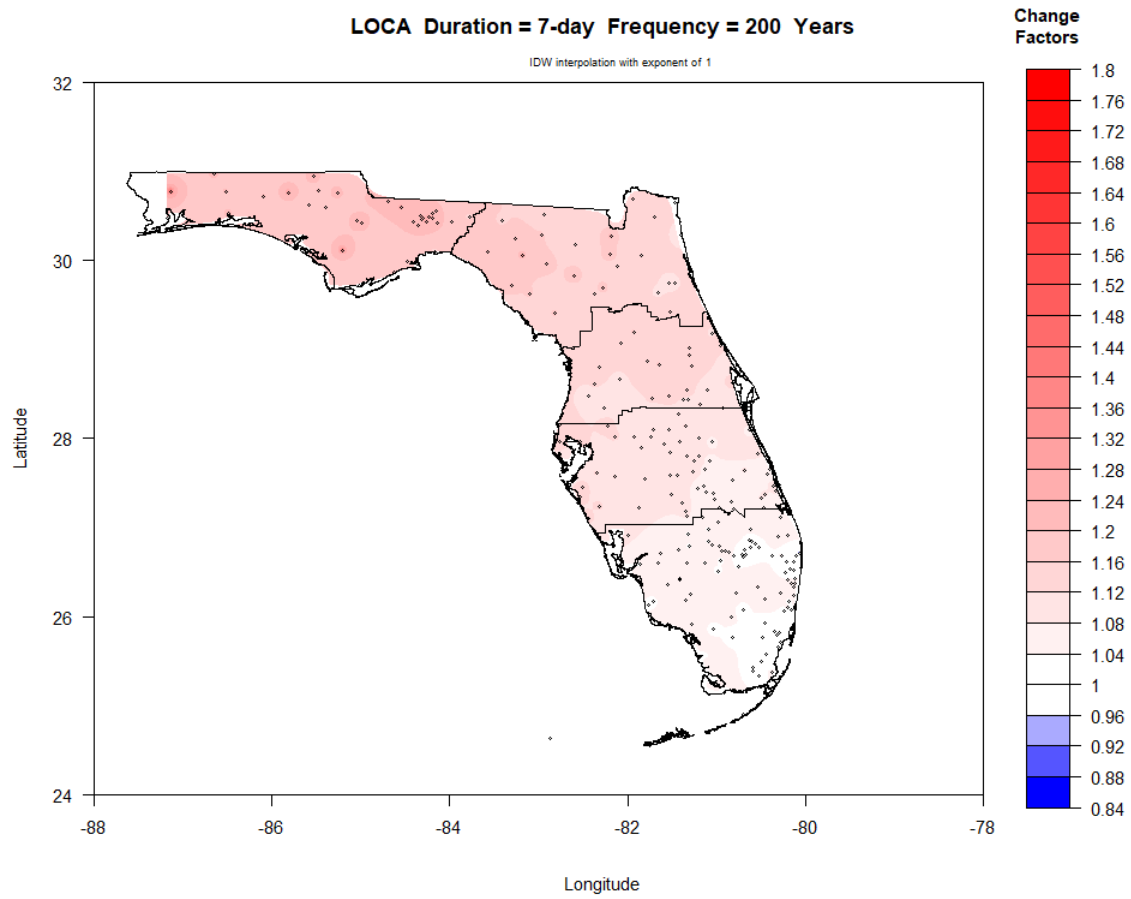
**Figure IV-39. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 25-year return period.**



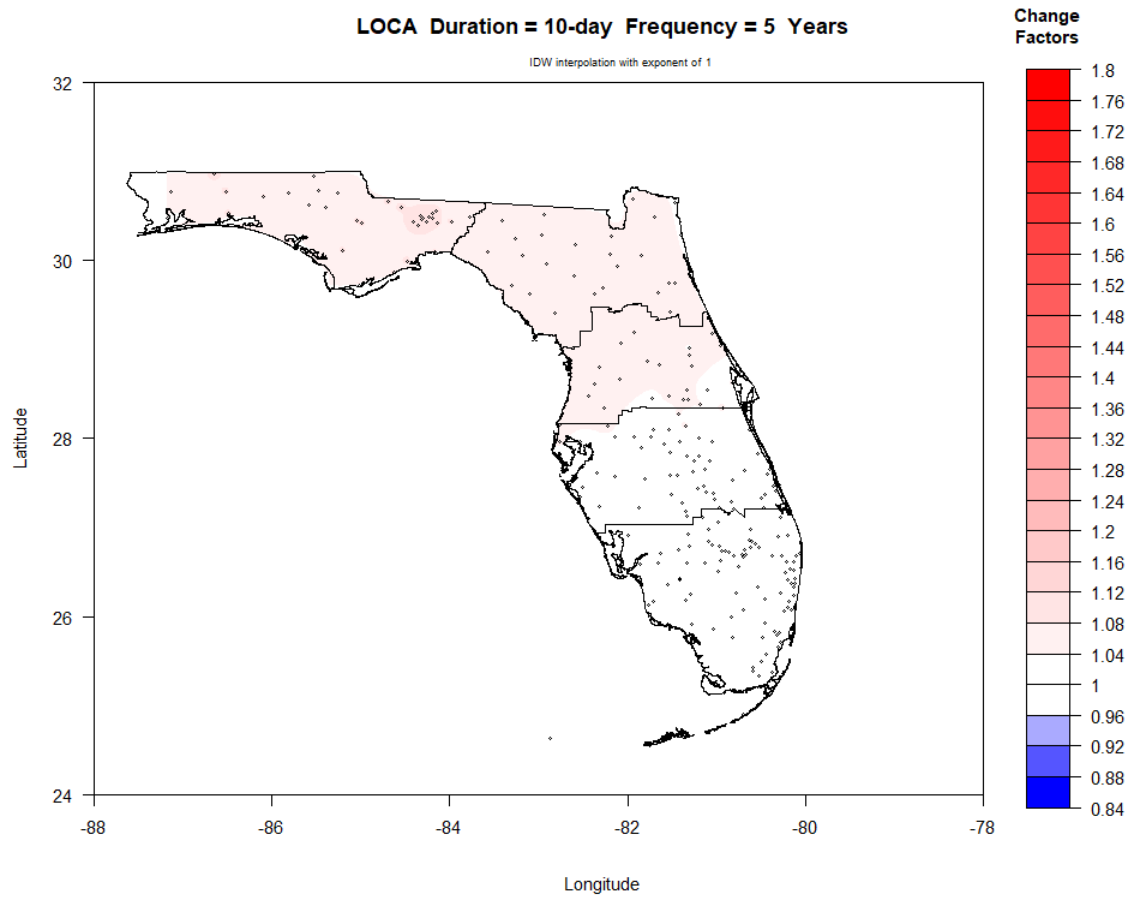
**Figure IV-40. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 50-year return period.**



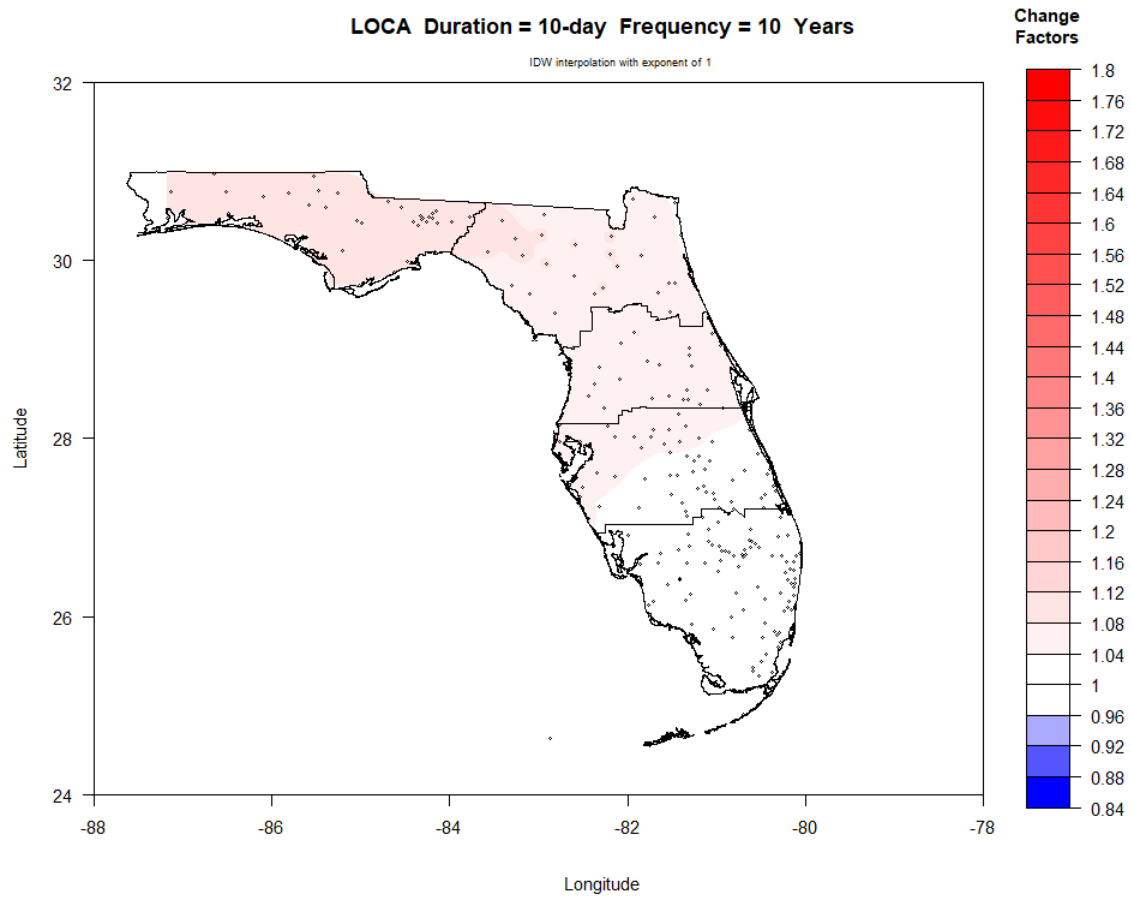
**Figure IV-41. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 100-year return period.**



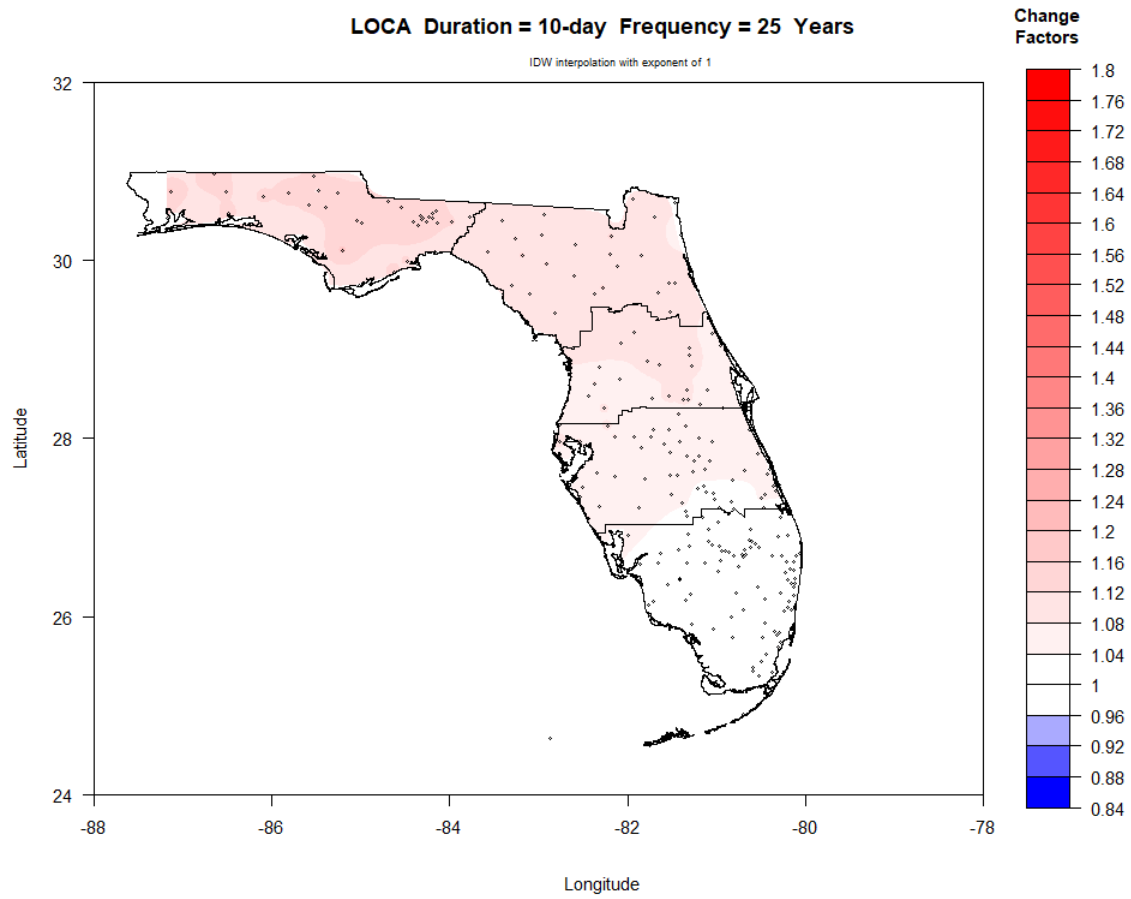
**Figure IV-42. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 200-year return period.**



**Figure IV-43. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 5-year return period.**

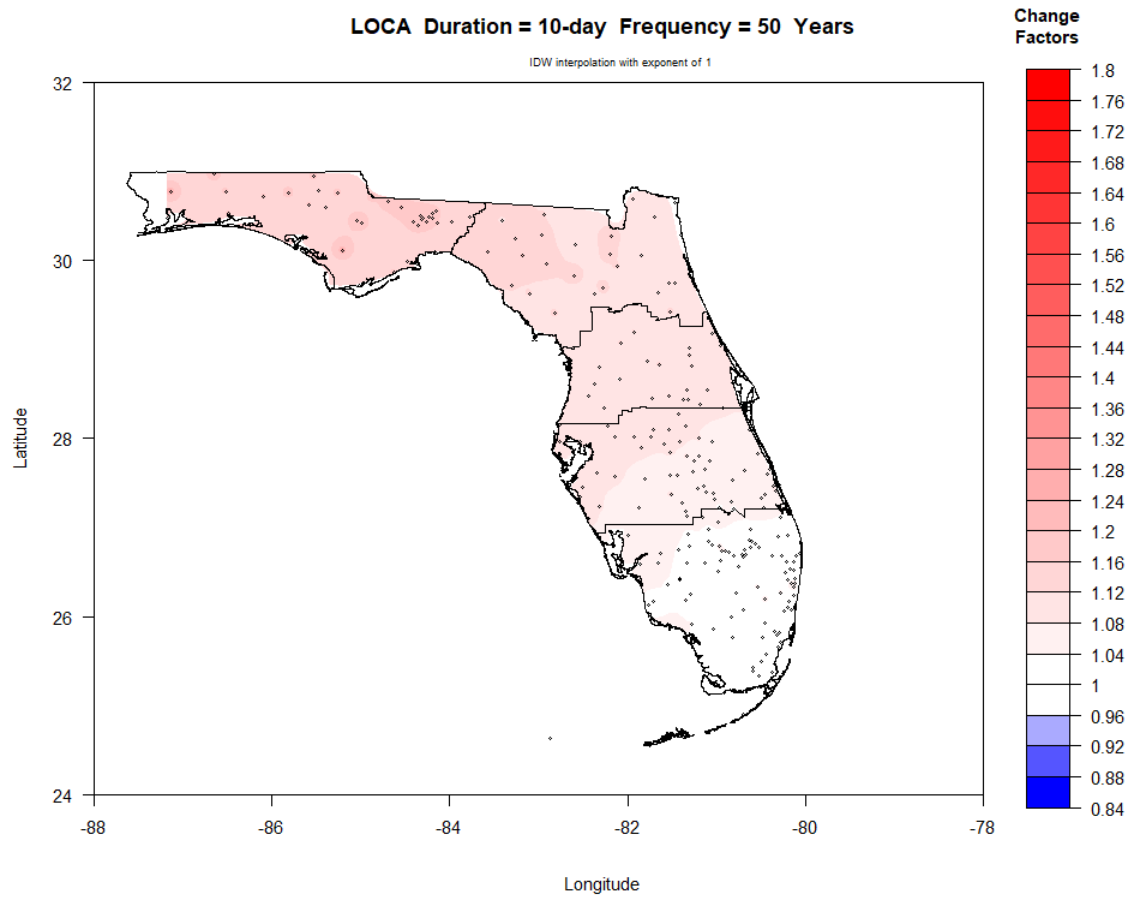


**Figure IV-44. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 10-year return period.**

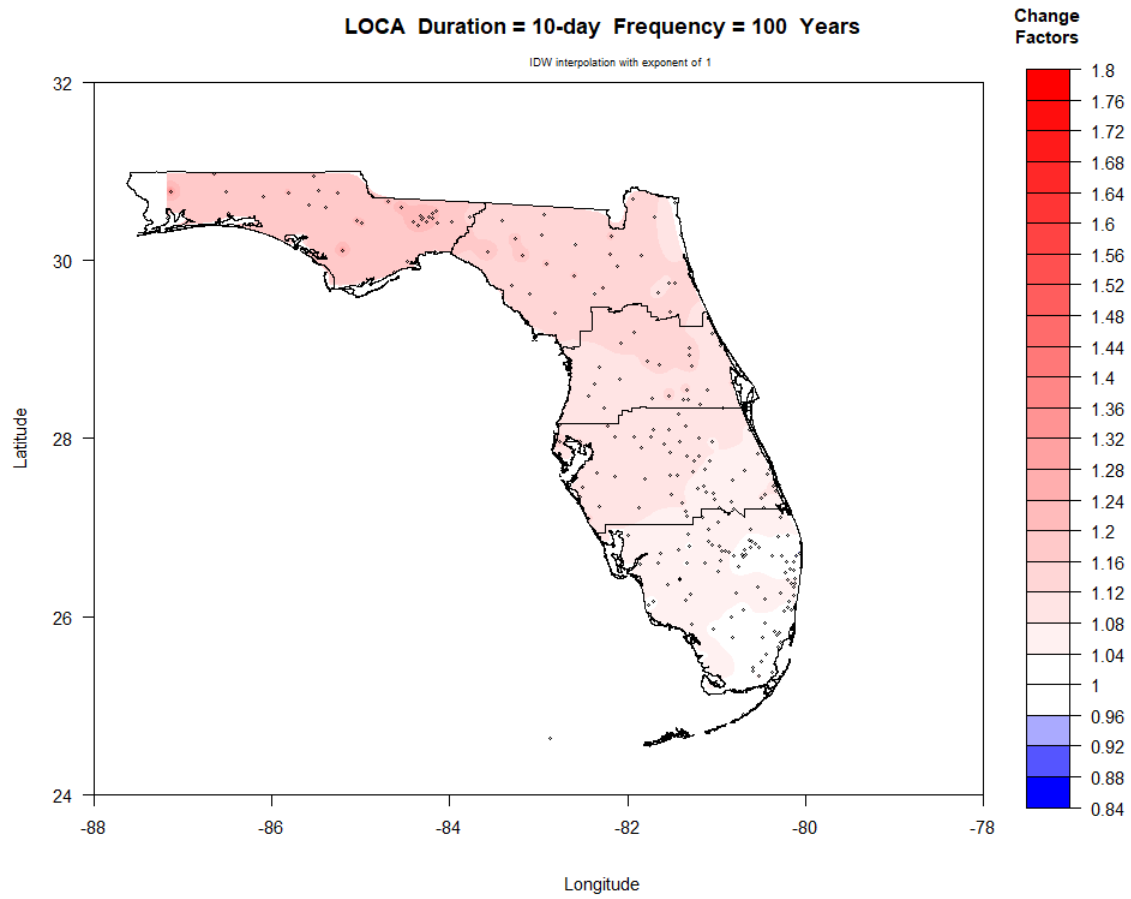


**Figure IV-45. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 25-year return period.**

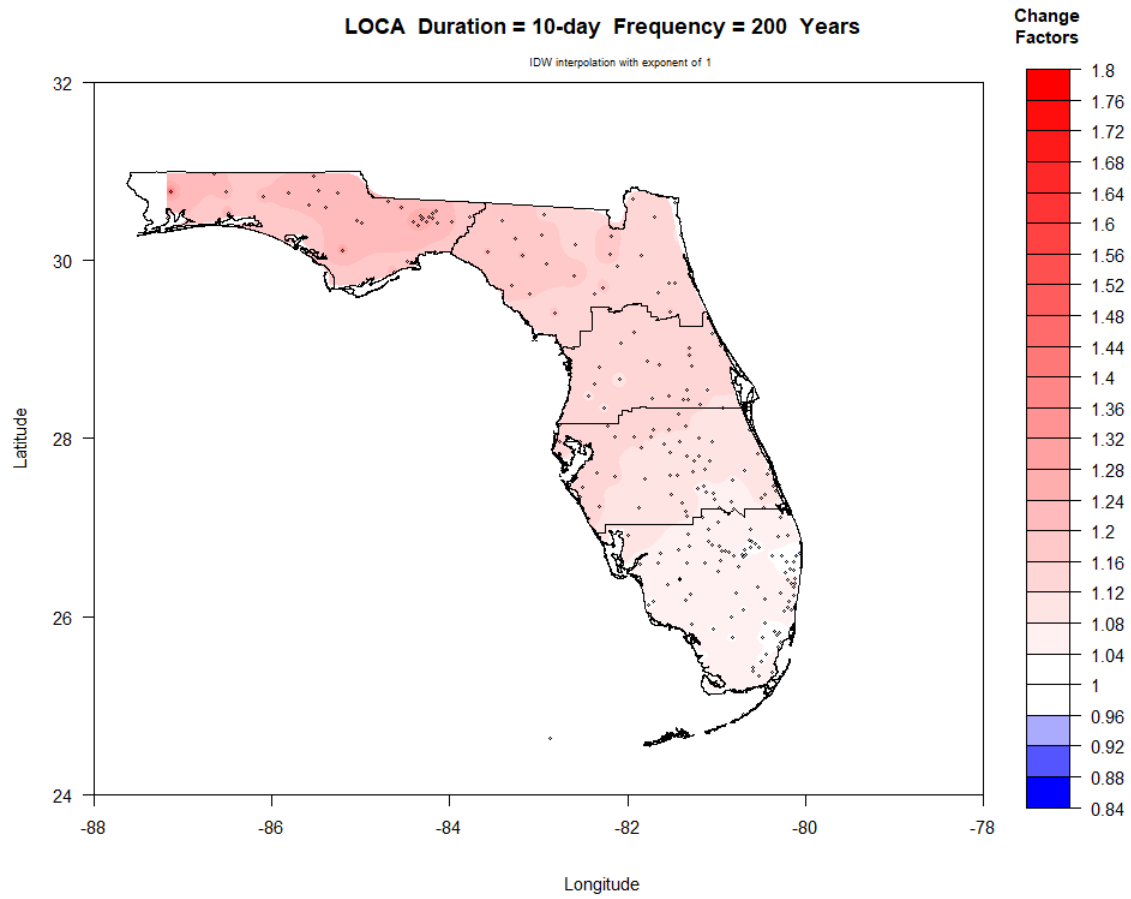




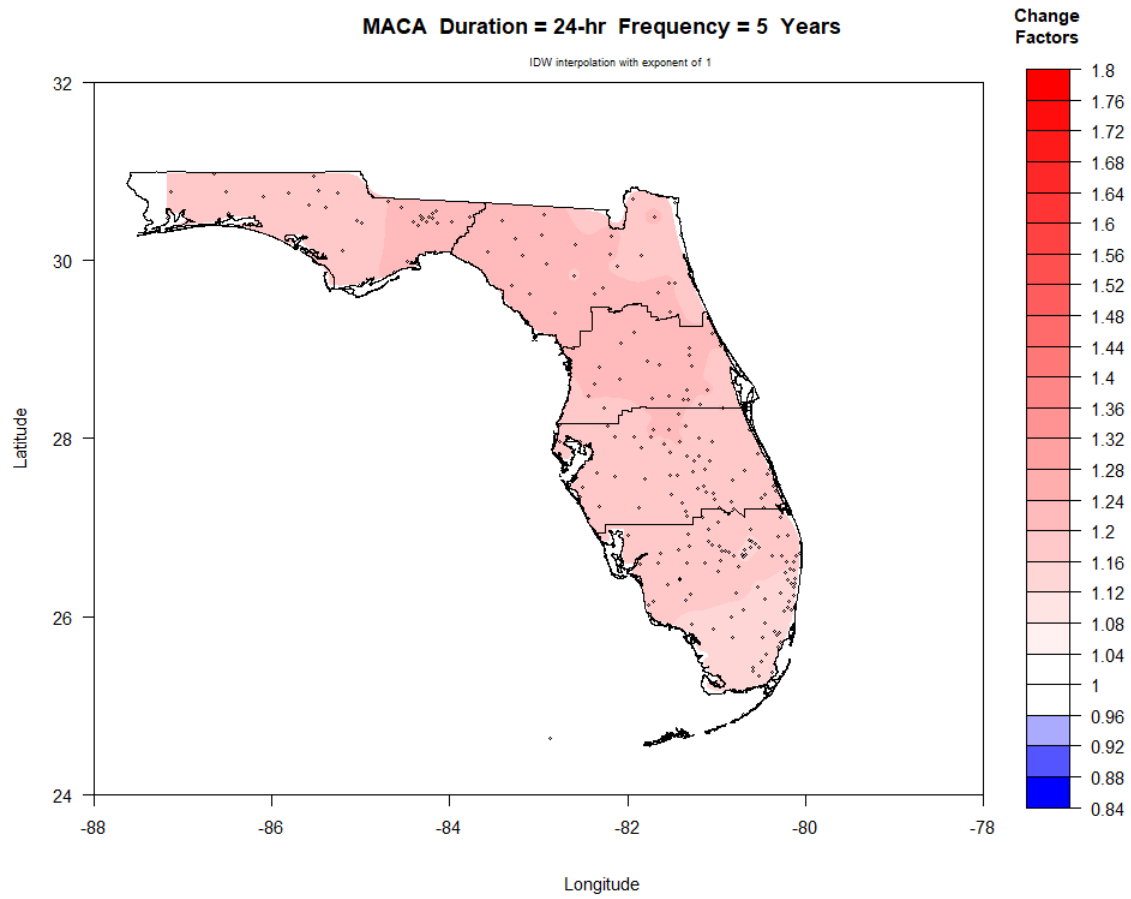
**Figure IV-46. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 50-year return period.**



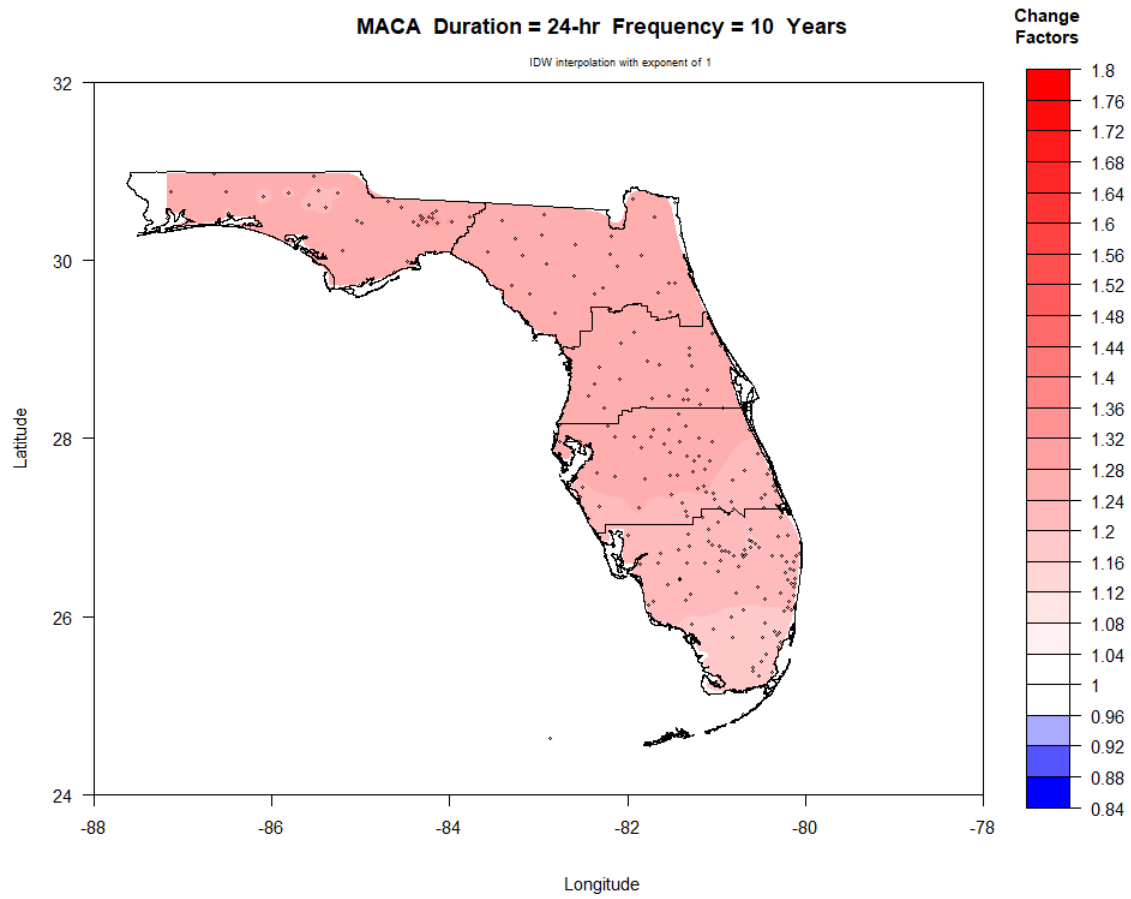
**Figure IV-47. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 100-year return period.**



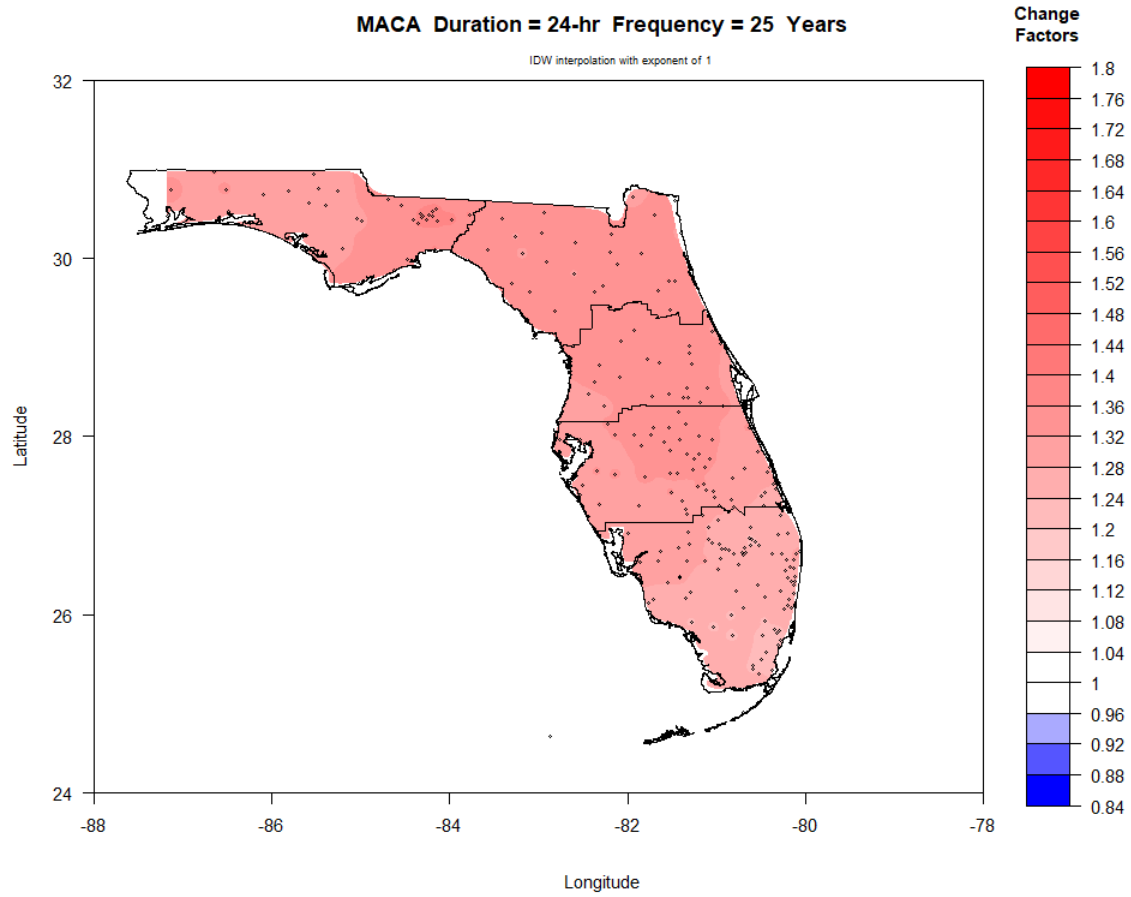
**Figure IV-48. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 200-year return period.**



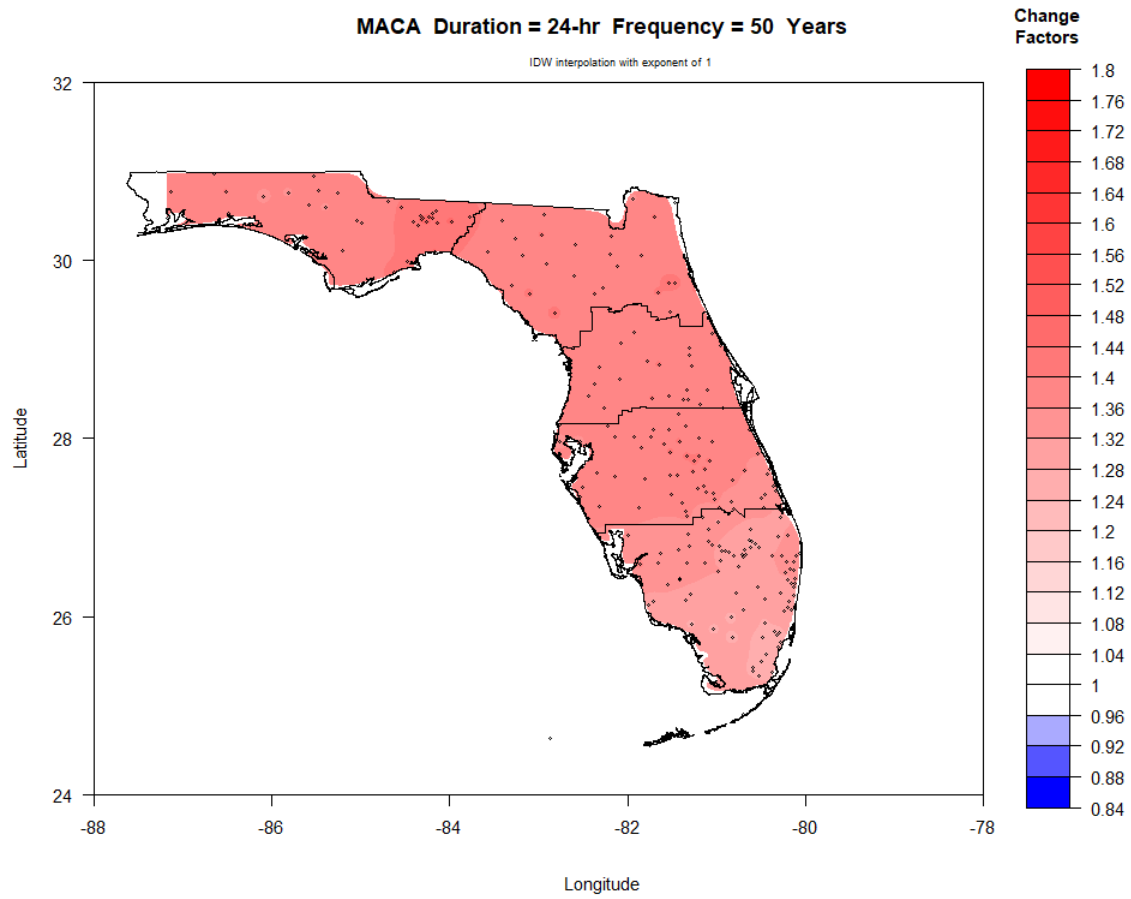
**Figure IV-49. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 5-year return period.**



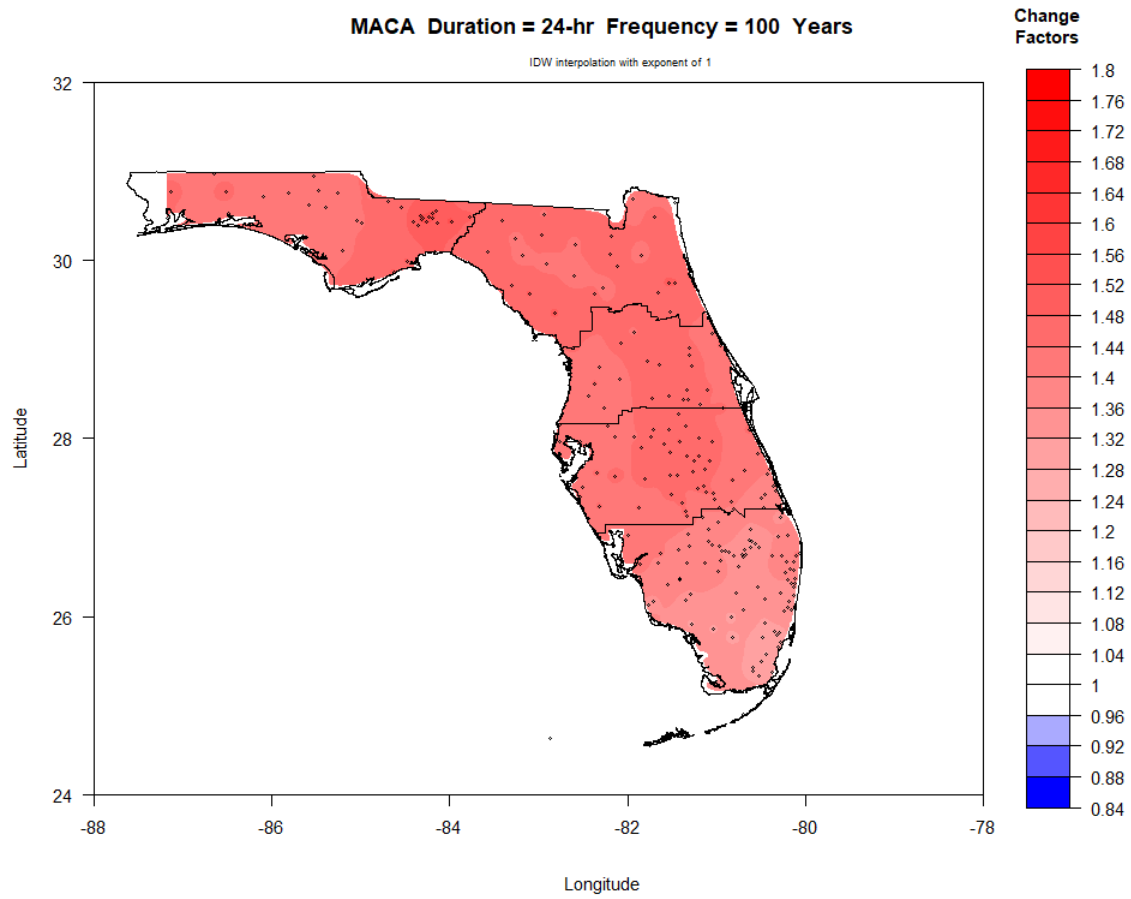
**Figure IV-50. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 10-year return period.**



**Figure IV-51. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 25-year return period.**

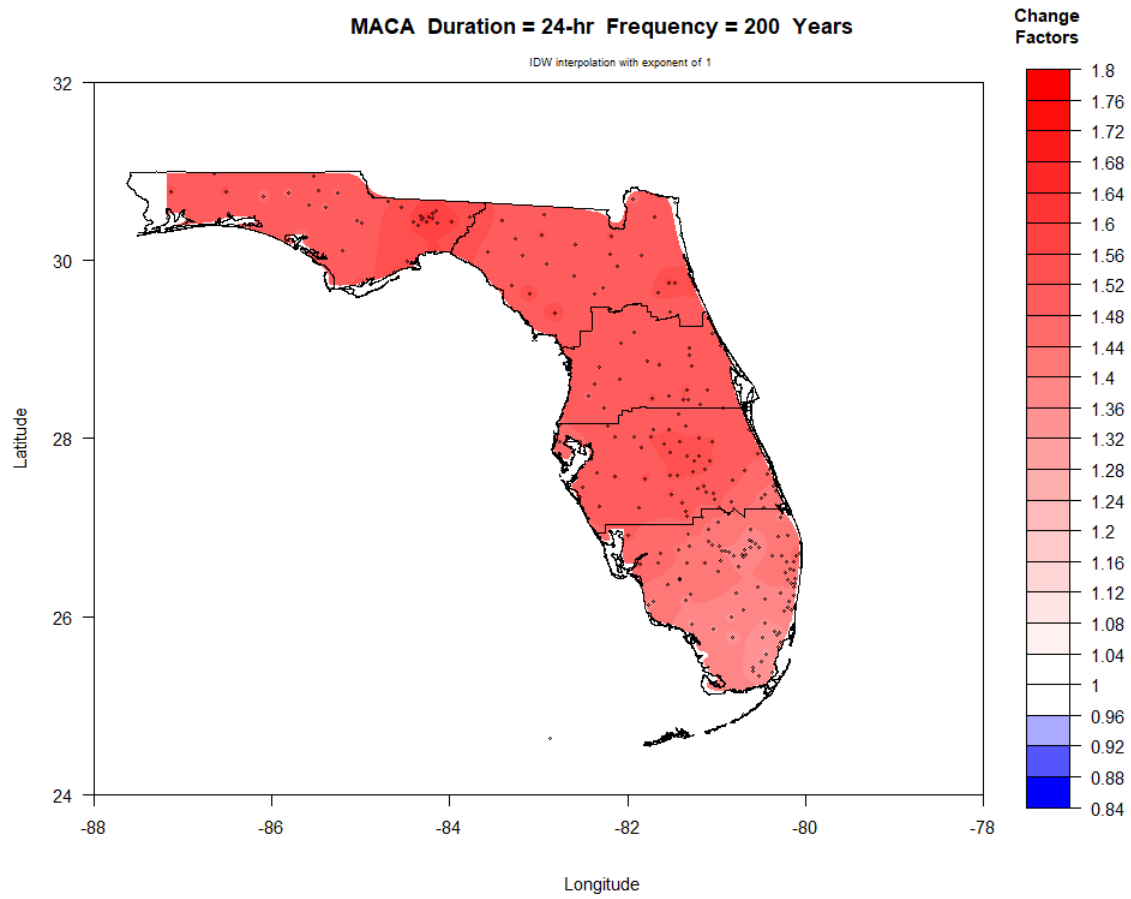


**Figure IV-52. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 50-year return period.**

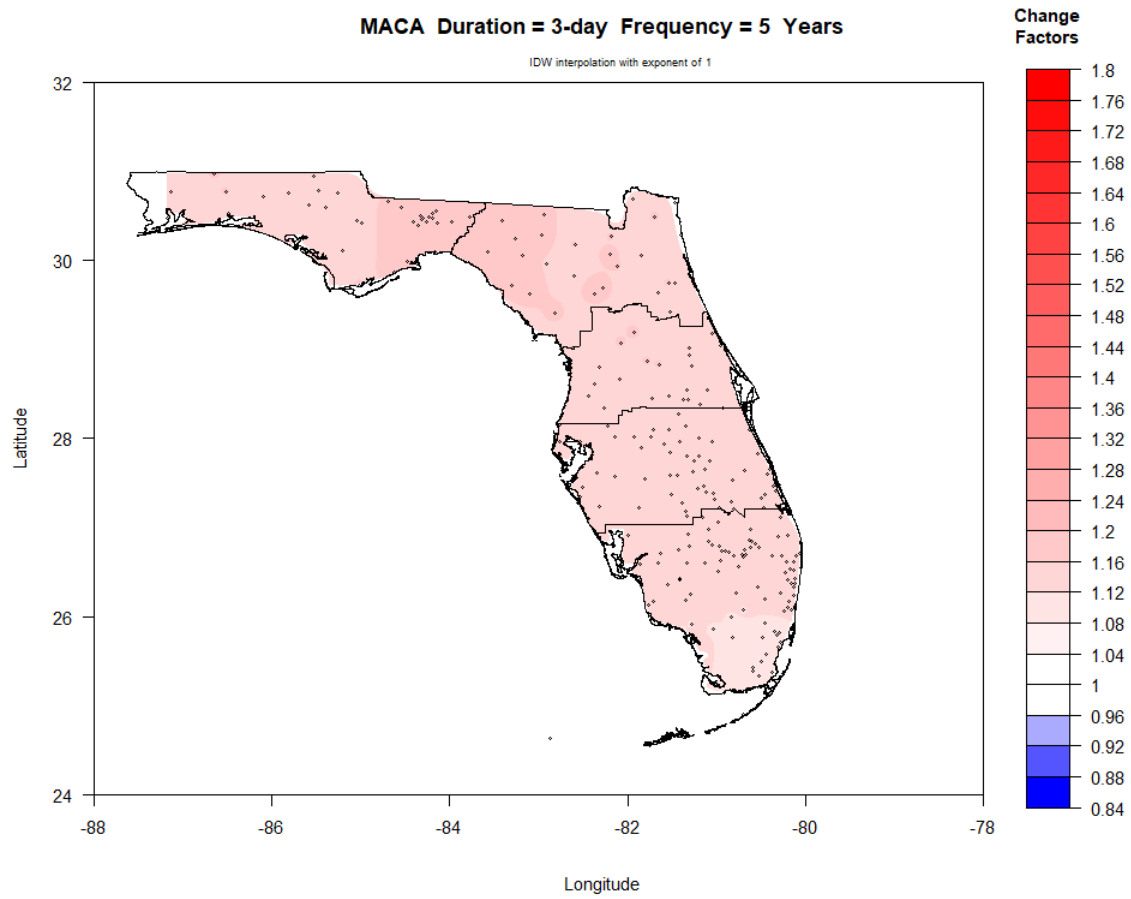


**Figure IV-53. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 100-year return period.**

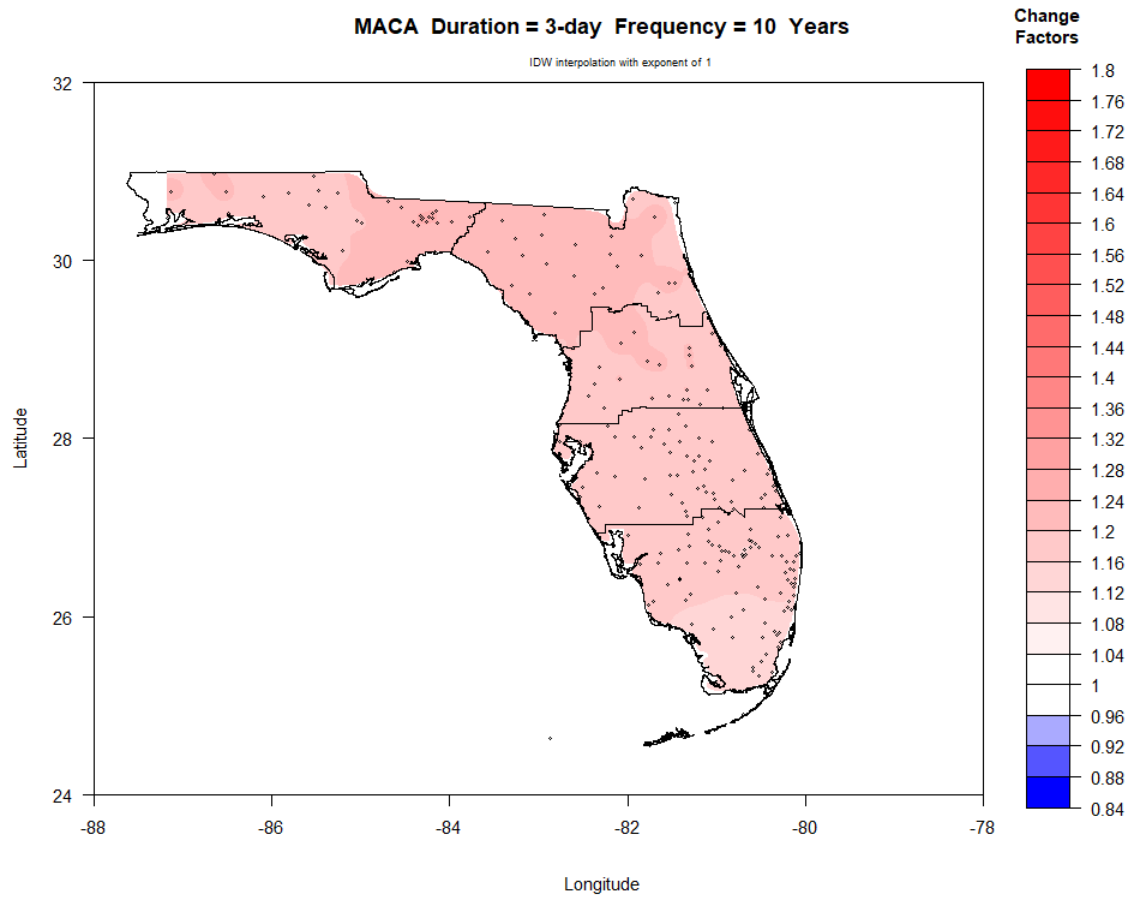




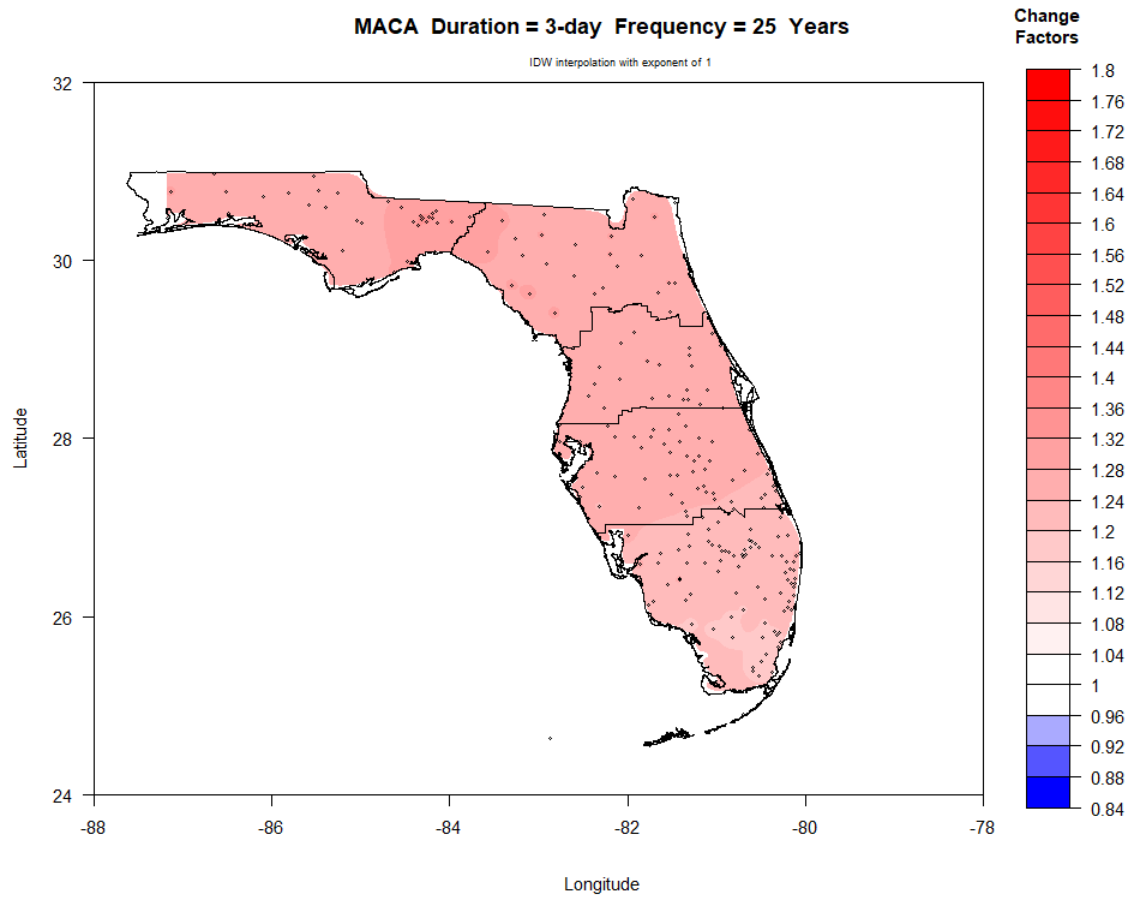
**Figure IV-54. Map of FAR period (2060-2099) change factors across Florida for 24-hr duration and 200-year return period.**



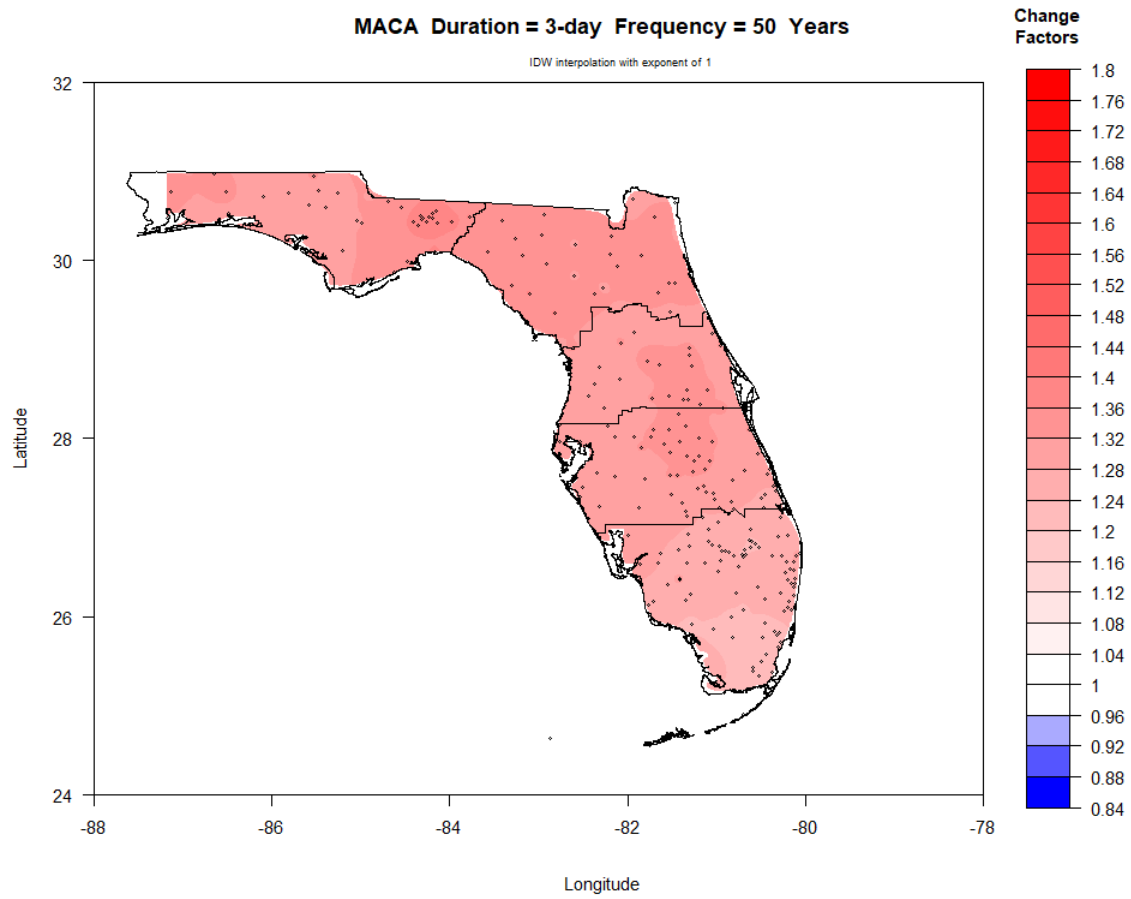
**Figure IV-55. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 5-year return period.**



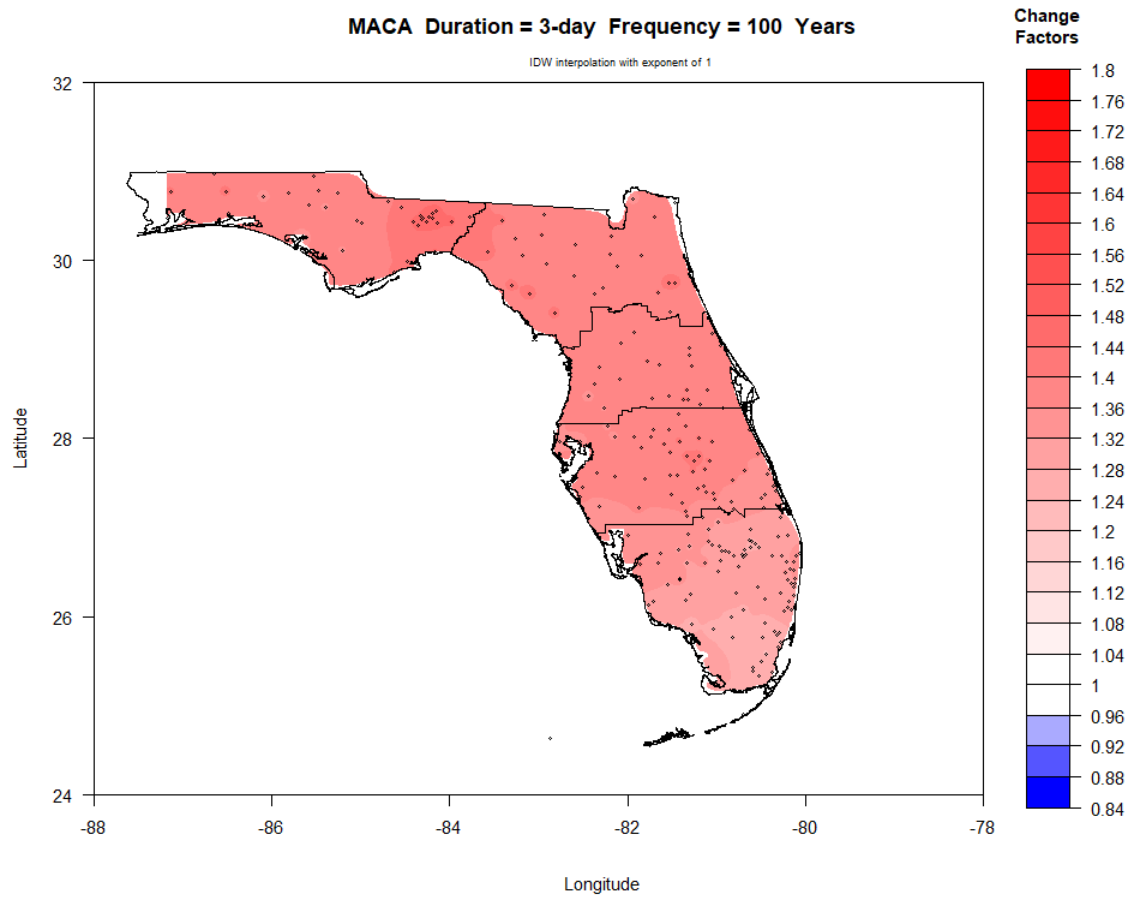
**Figure IV-56. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 10-year return period.**



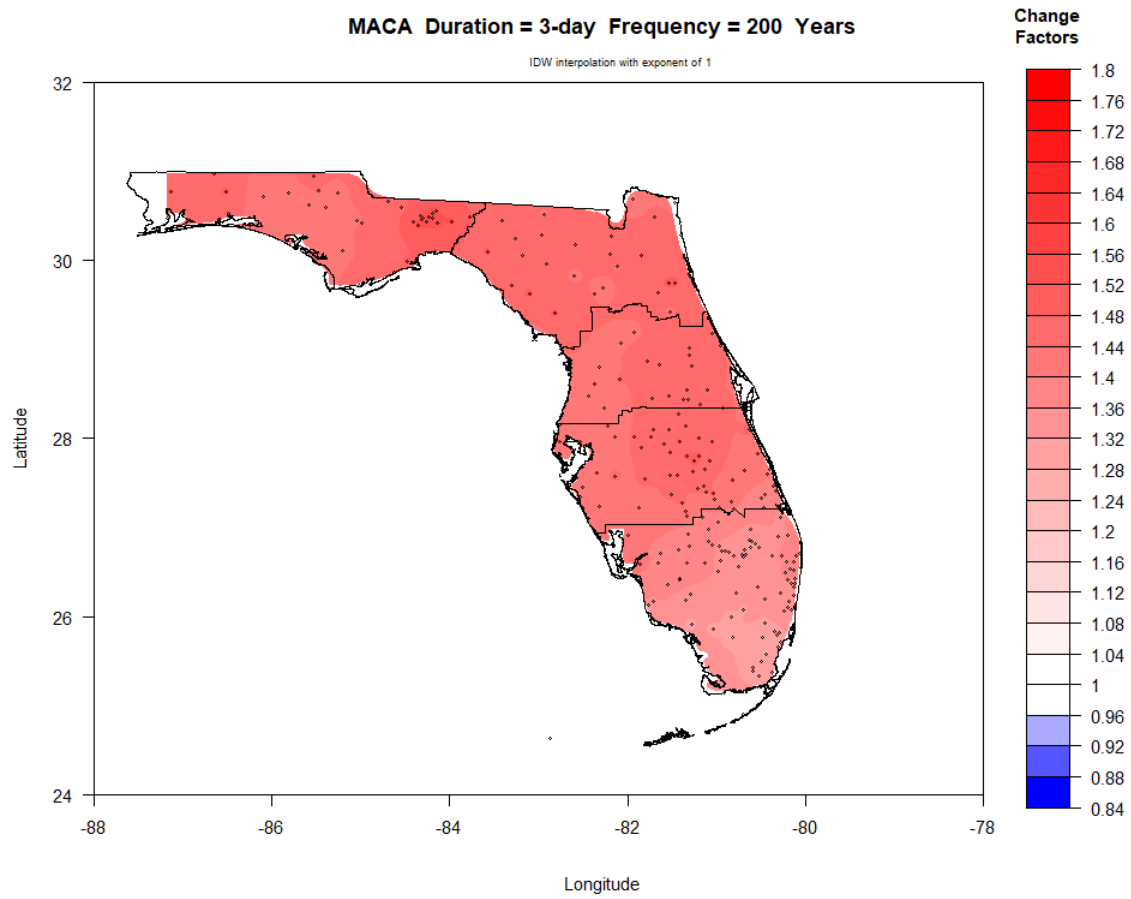
**Figure IV-57. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 25-year return period.**



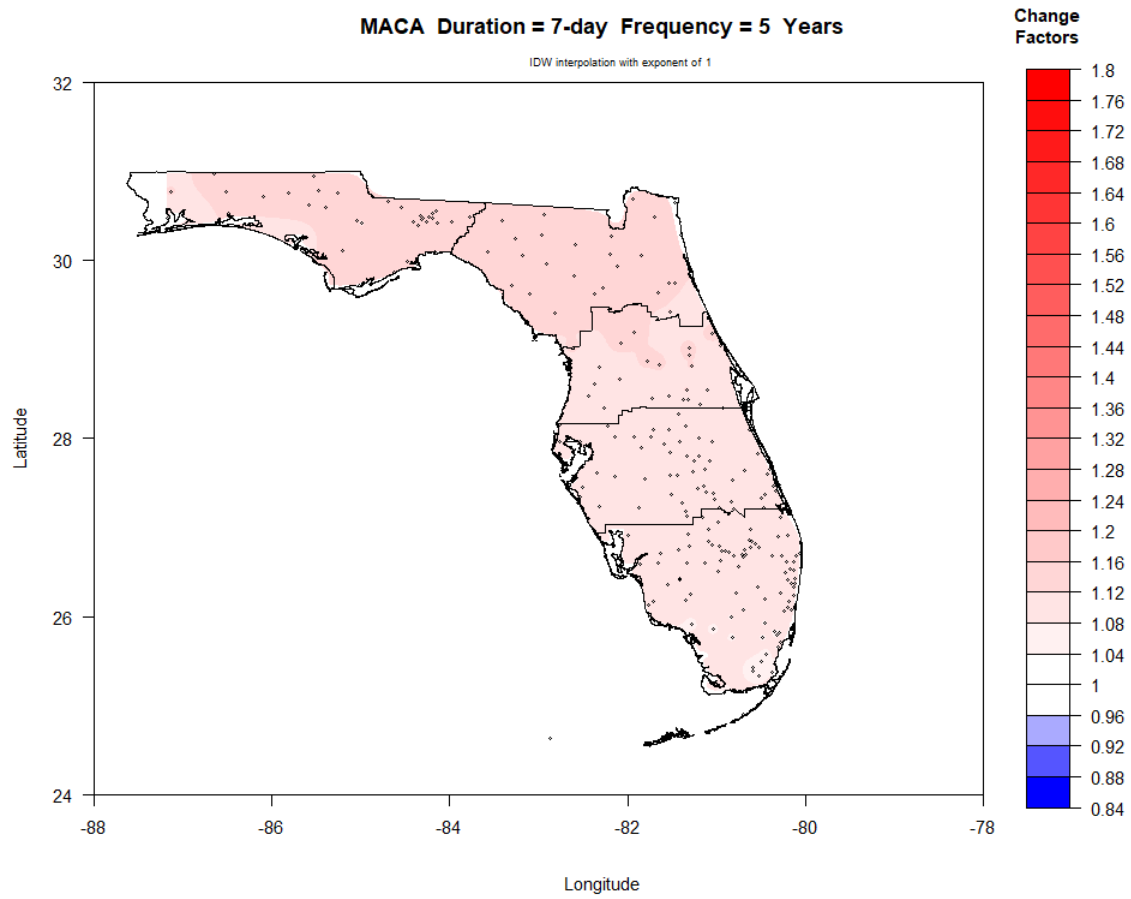
**Figure IV-58. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 50-year return period.**



**Figure IV-59. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 100-year return period.**

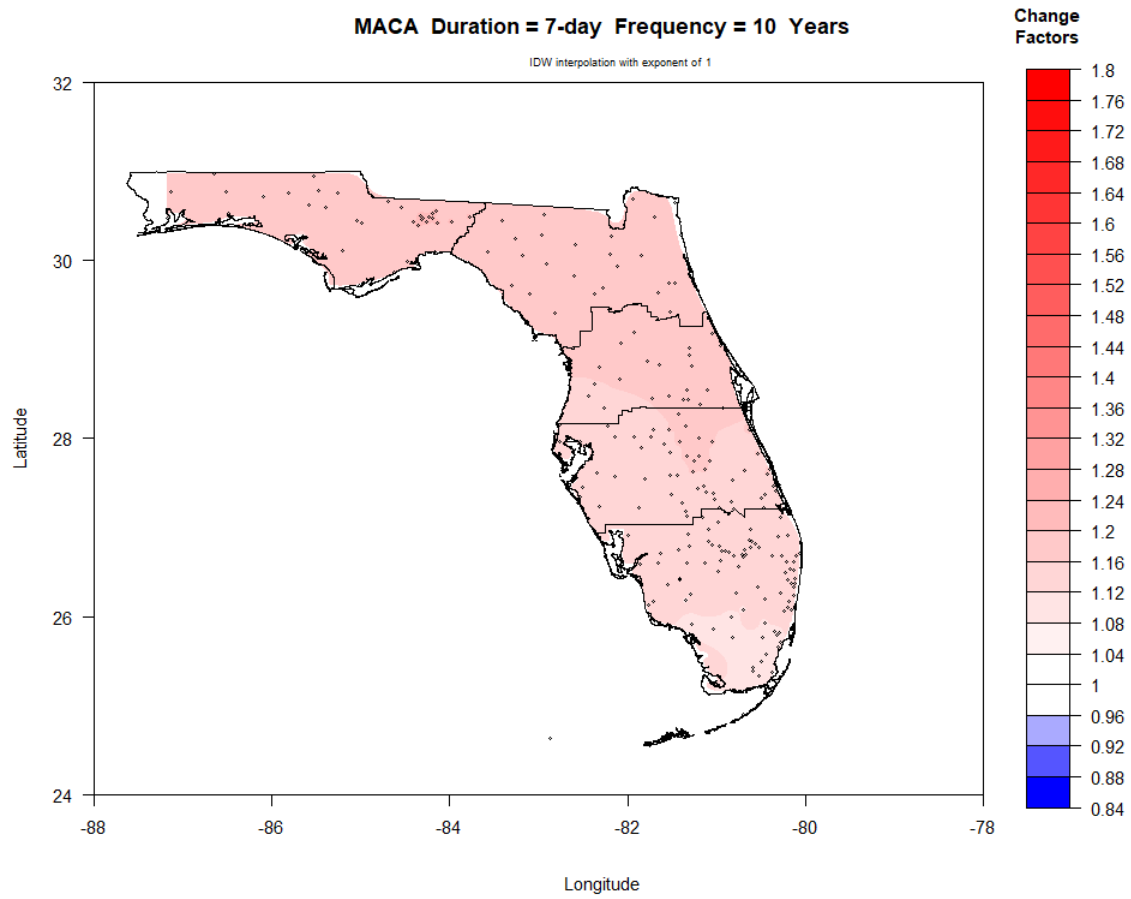


**Figure IV-60. Map of FAR period (2060-2099) change factors across Florida for 3-day duration and 200-year return period.**

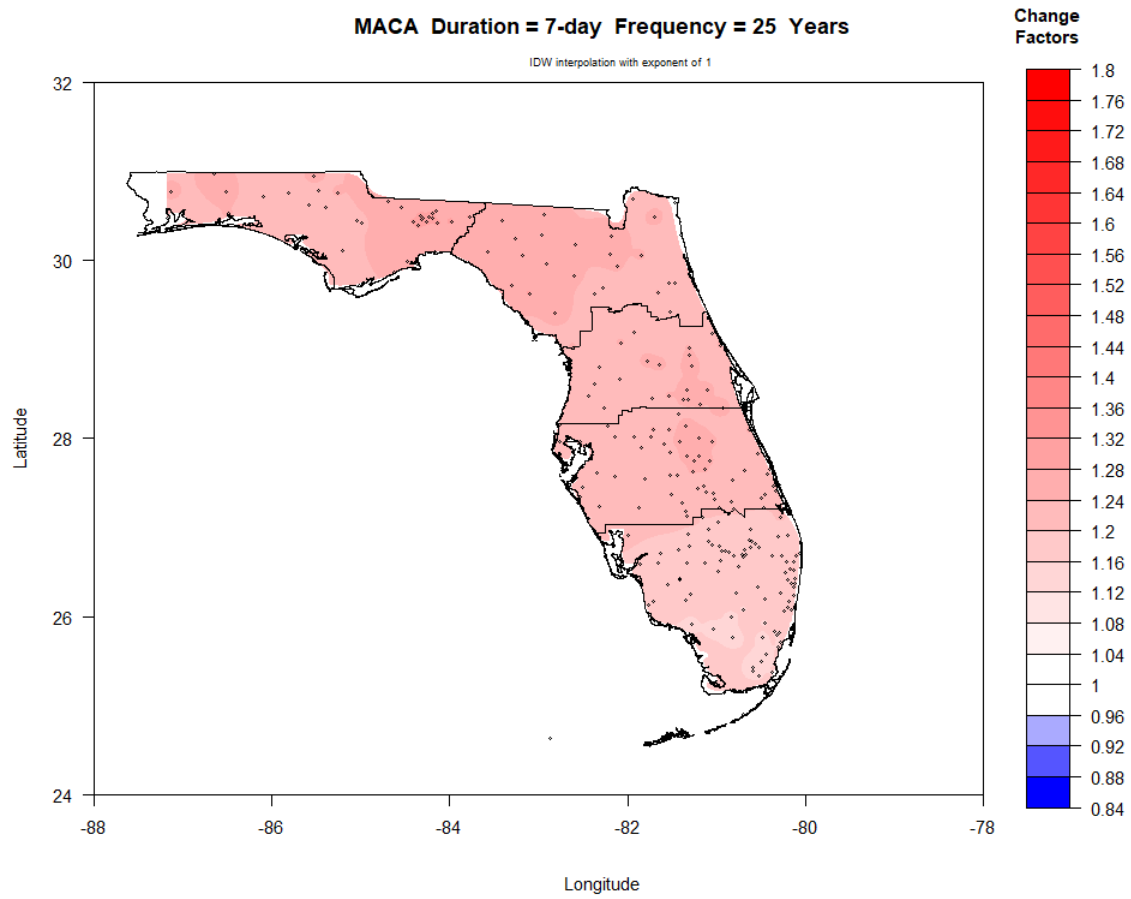


**Figure IV-61. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 5-year return period.**

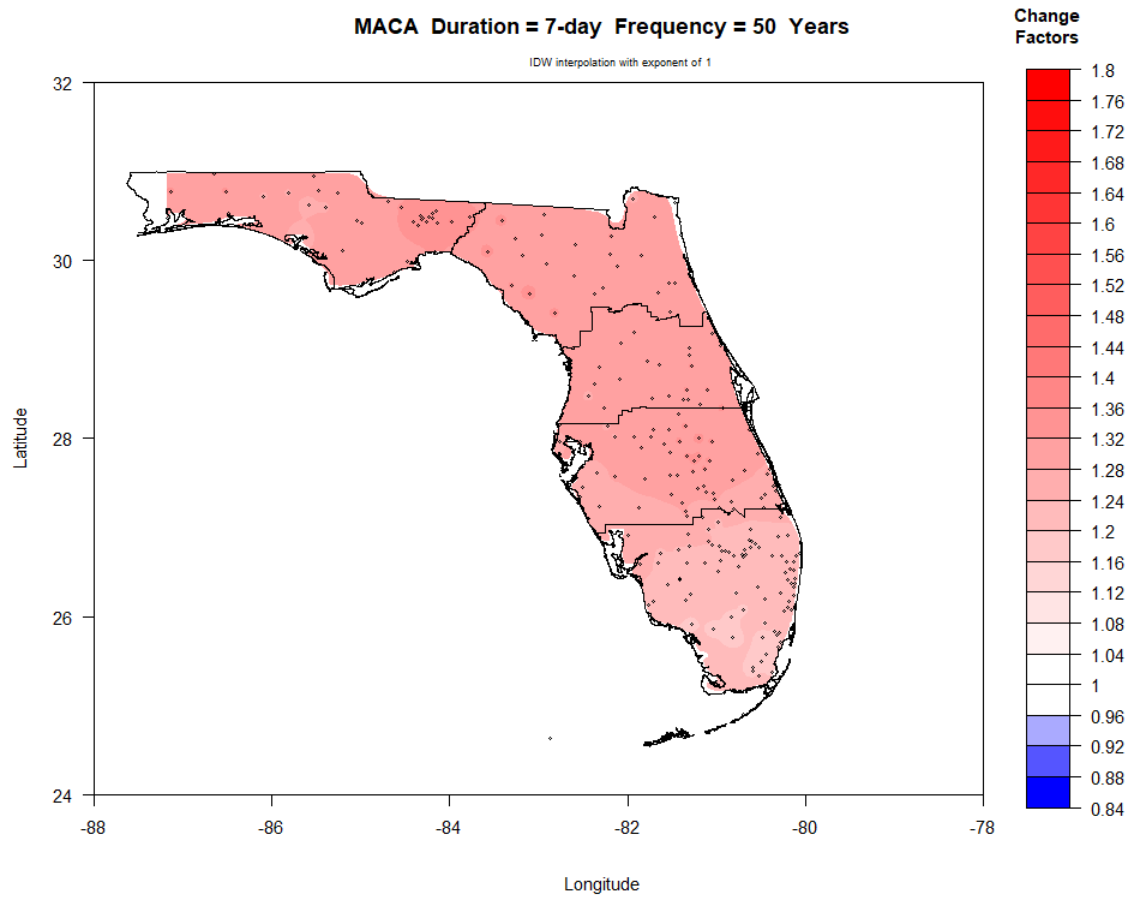




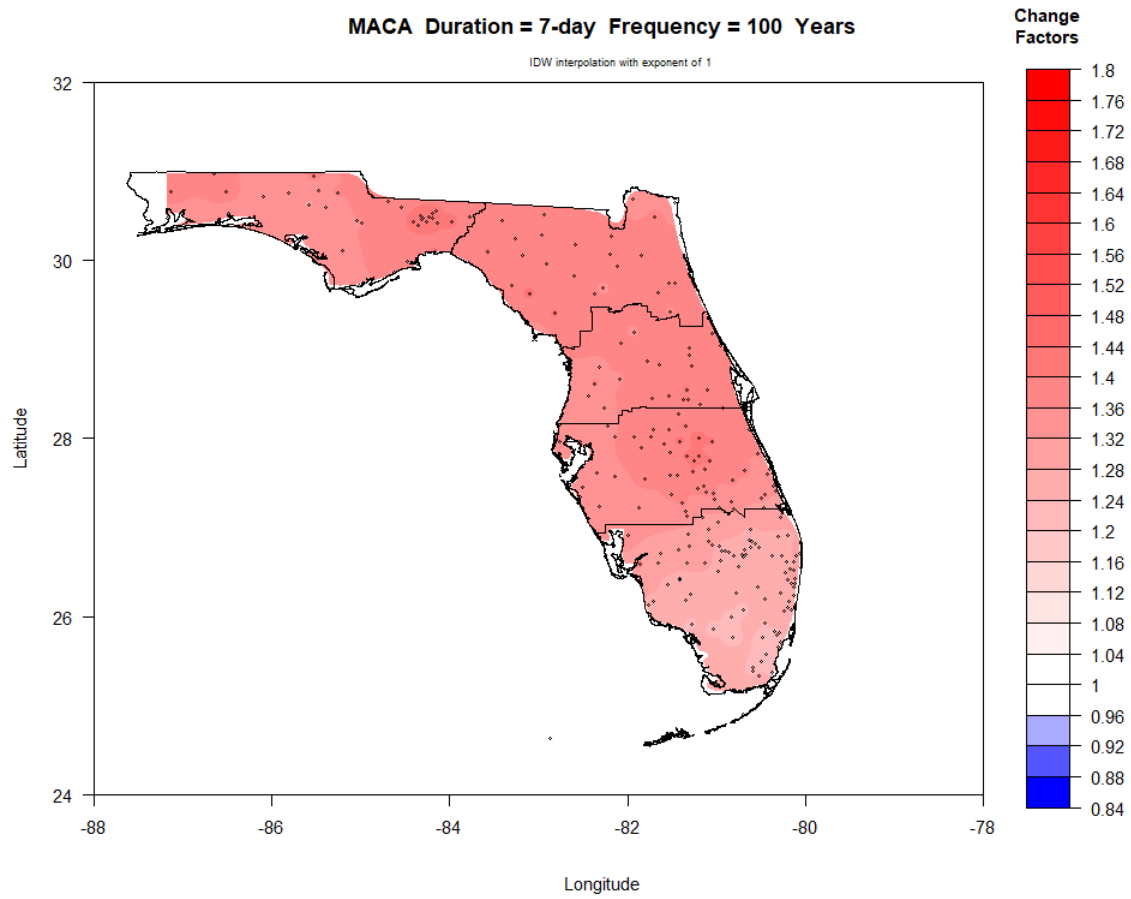
**Figure IV-62. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 10-year return period.**



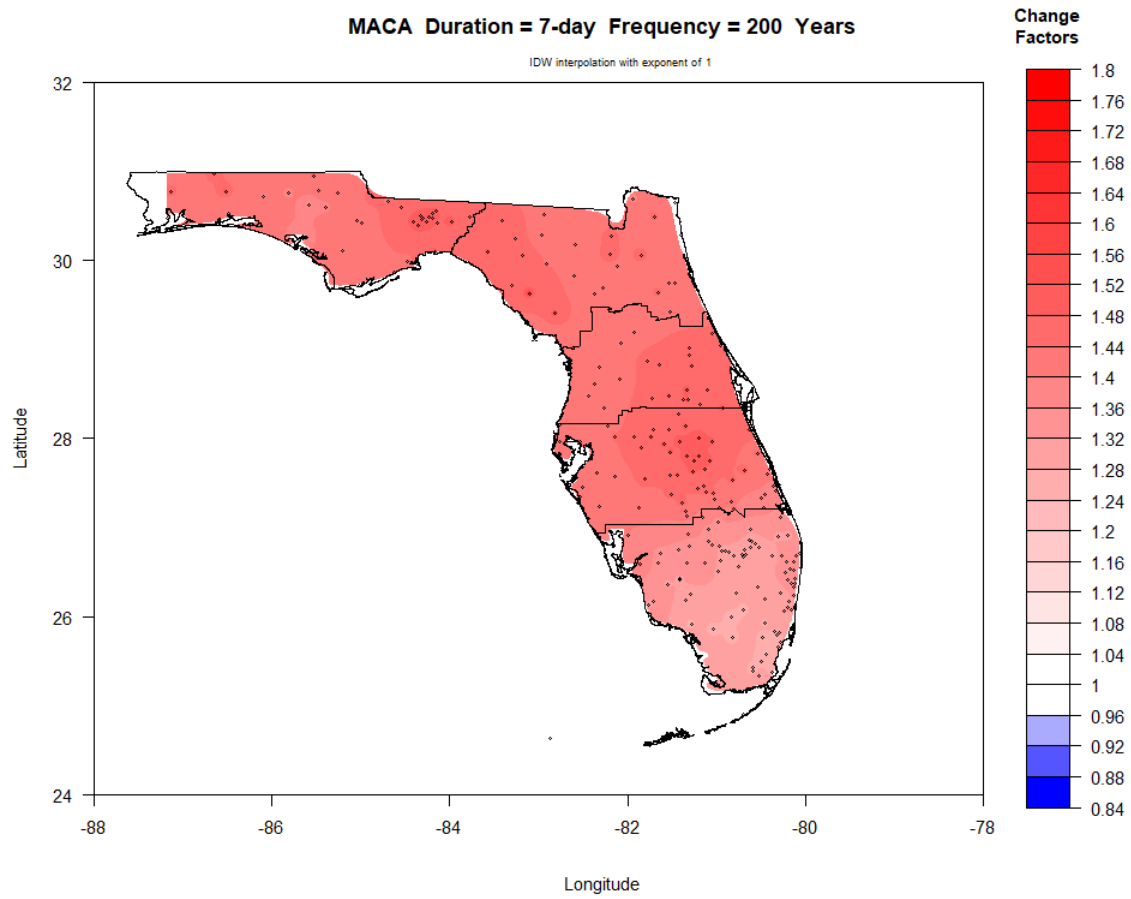
**Figure IV-63. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 25-year return period.**



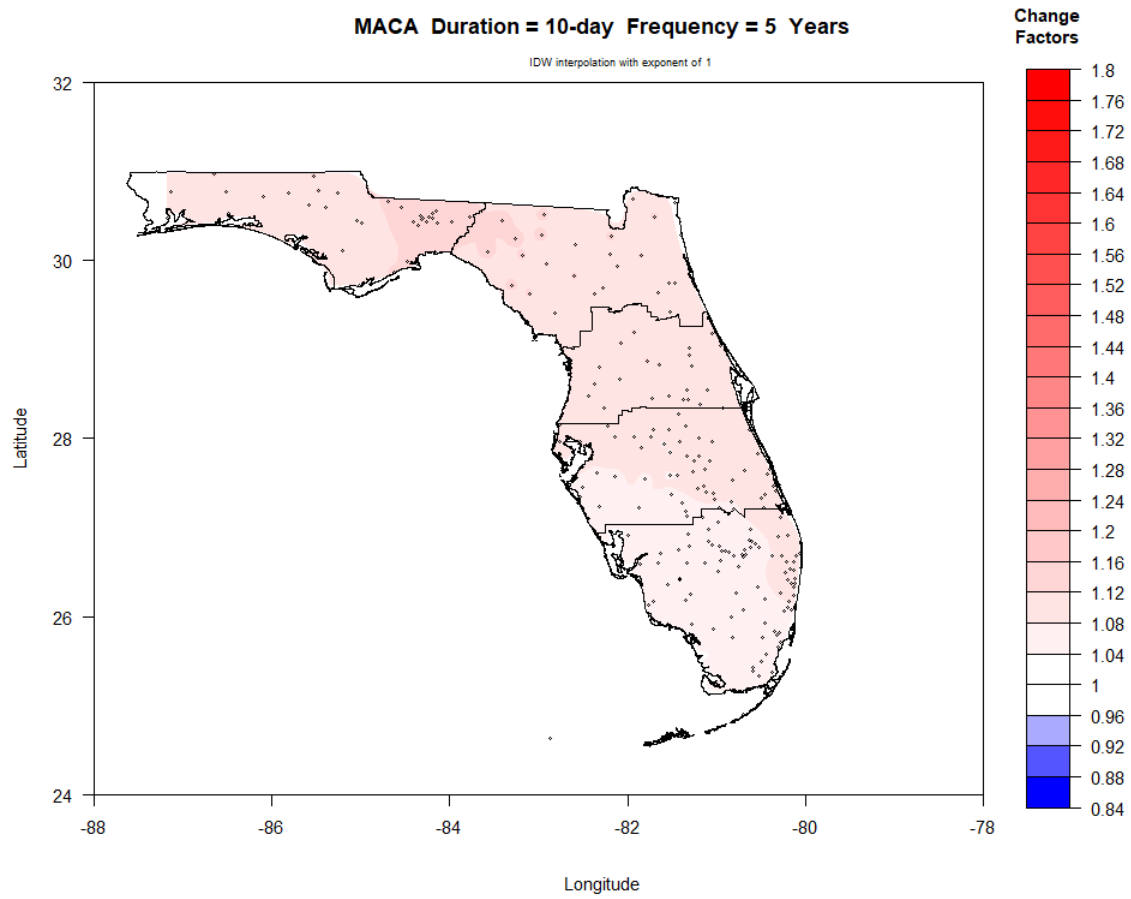
**Figure IV-64. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 50-year return period.**



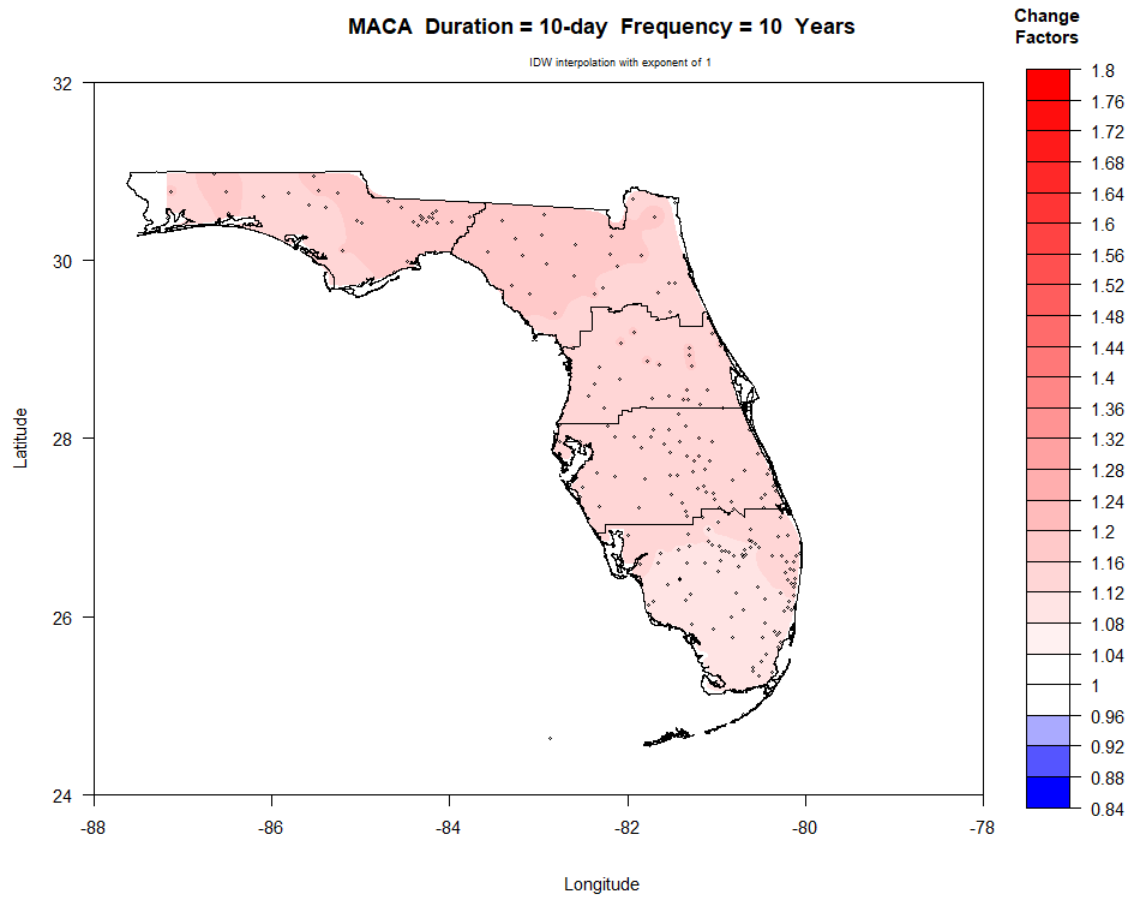
**Figure IV-65. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 100-year return period.**



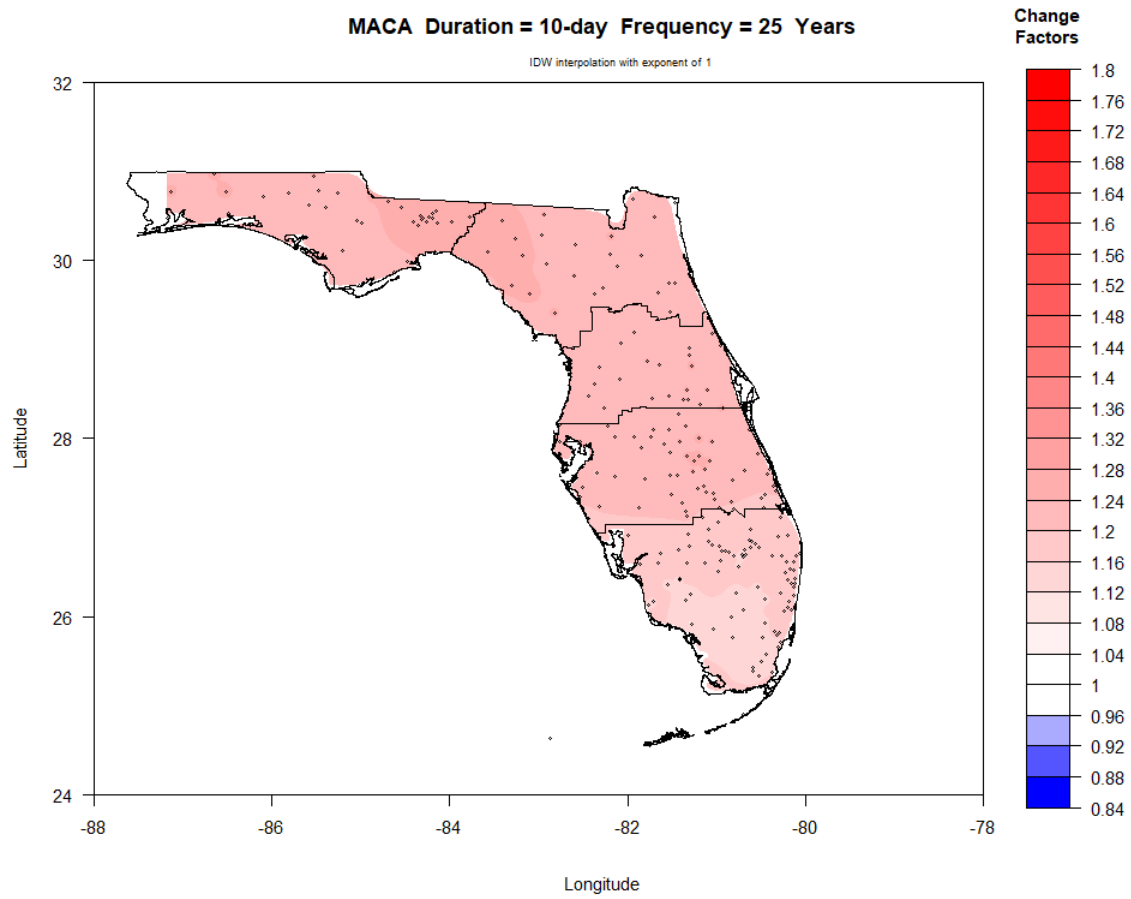
**Figure IV-66. Map of FAR period (2060-2099) change factors across Florida for 7-day duration and 200-year return period.**



**Figure IV-67. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 5-year return period.**

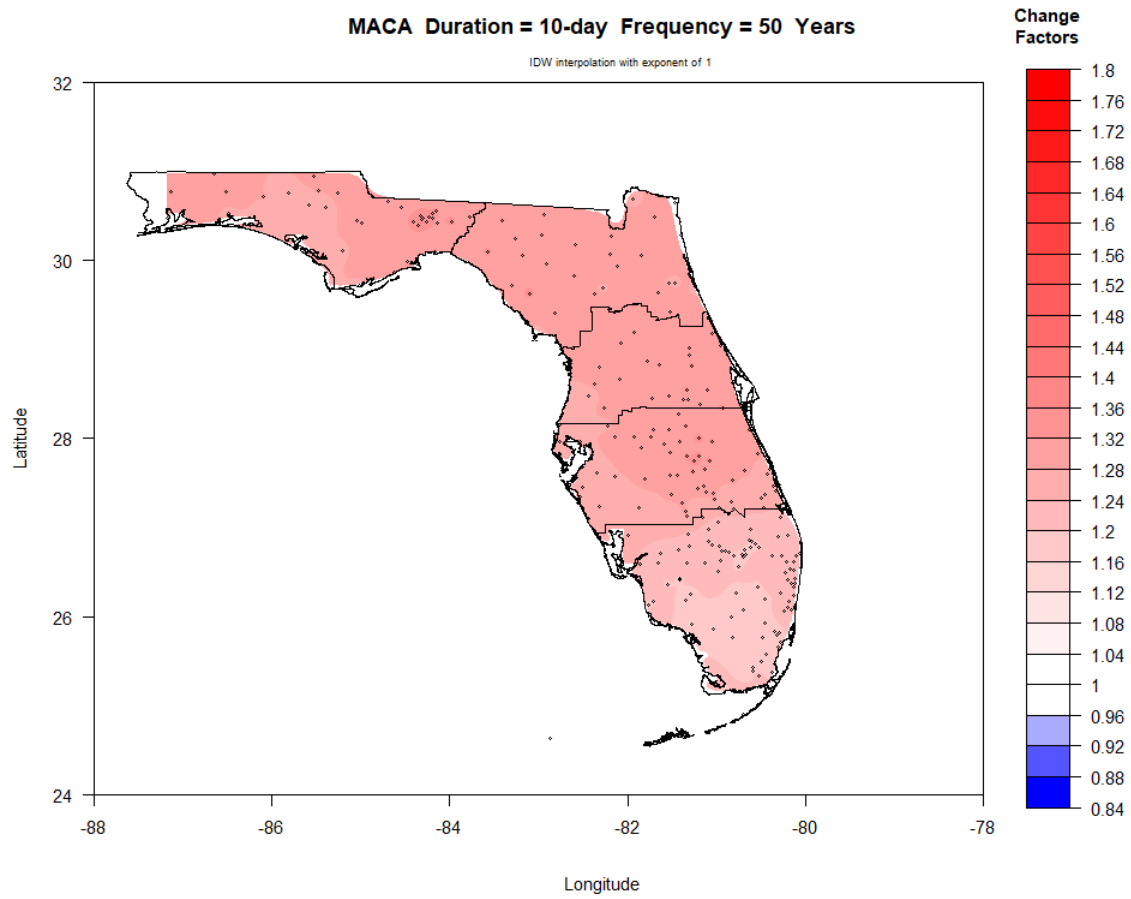


**Figure IV-68. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 10-year return period.**

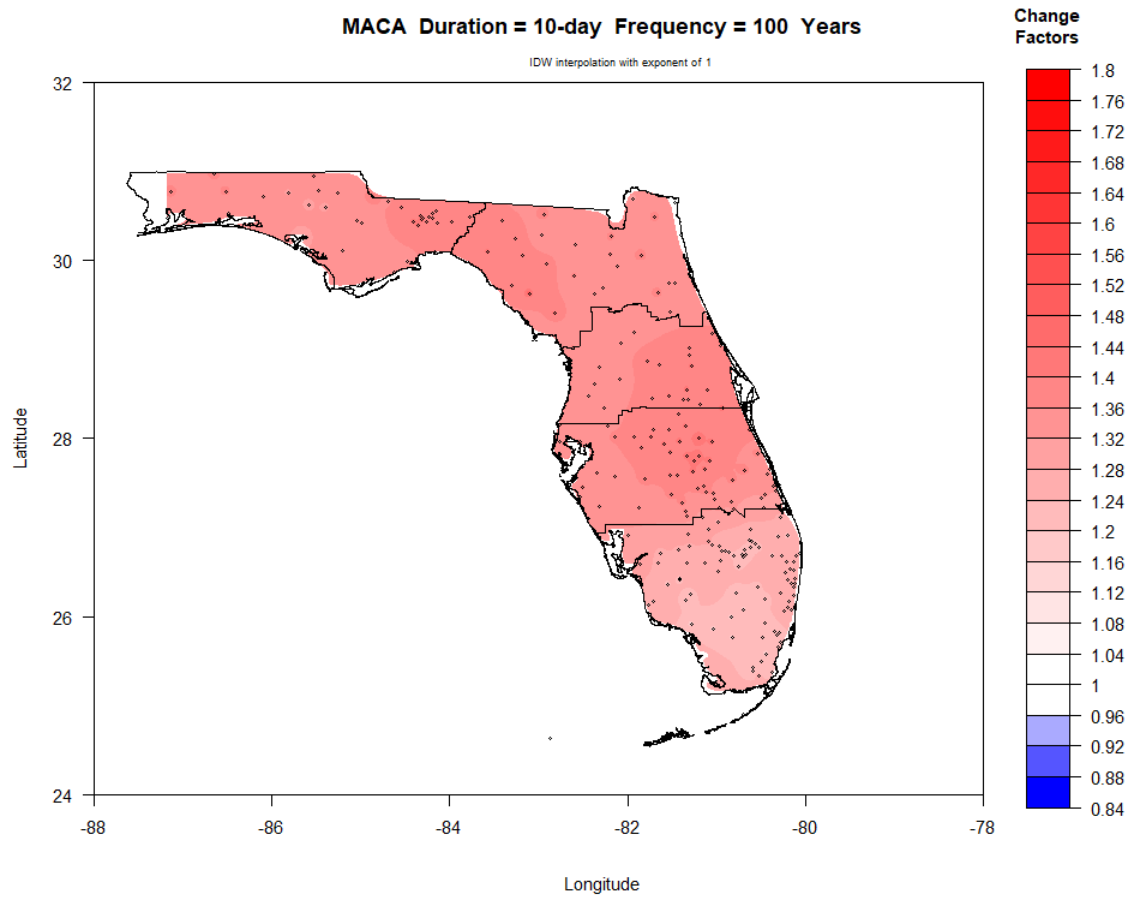


**Figure IV-69. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 25-year return period.**

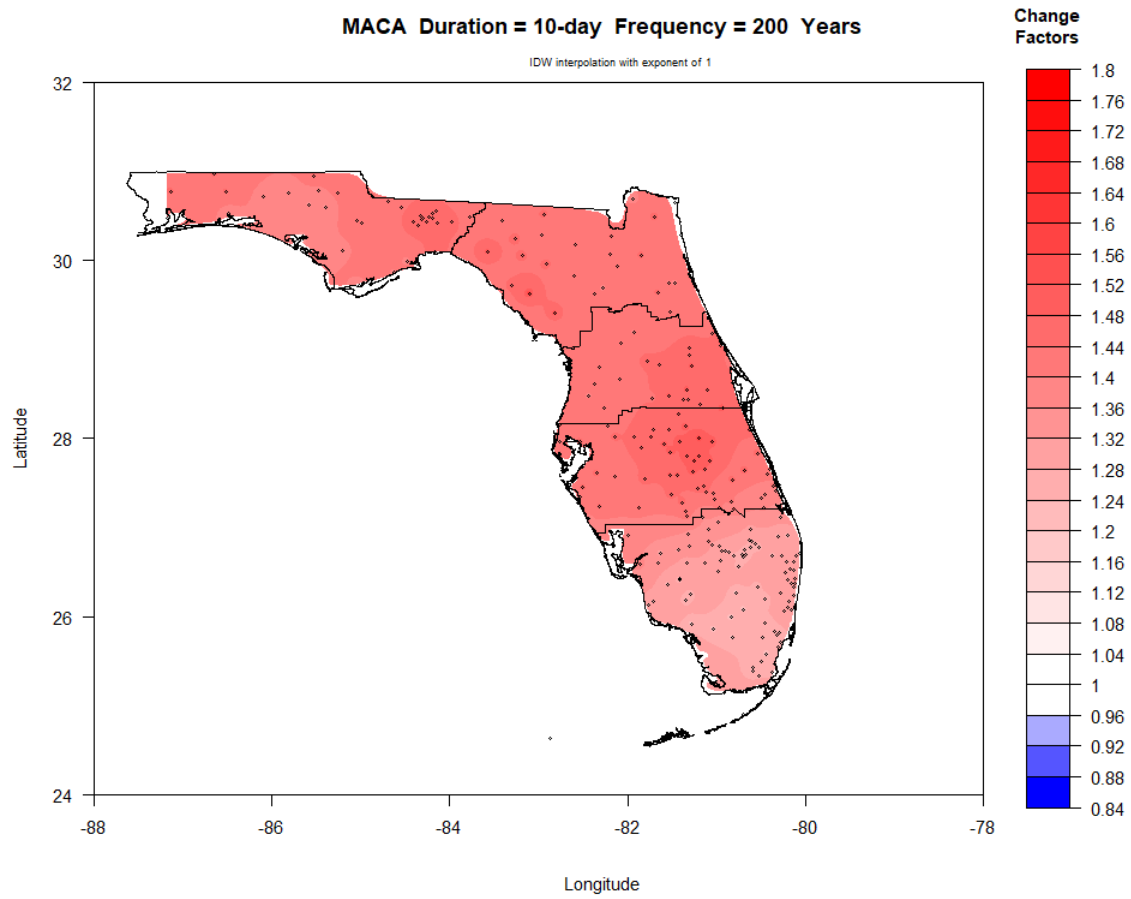




**Figure IV-70. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 50-year return period.**



**Figure IV-71. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 100-year return period.**



**Figure IV-72. Map of FAR period (2060-2099) change factors across Florida for 10-day duration and 200-year return period.**

## APPENDIX V. Website

In response to the following task of the project scope, “FIU SLSC shall develop statewide, web-based user interface for making extreme rainfall projections available to communities across the state”, web-access to the project results are provided using the Tableau software (<https://public.tableau.com/>). The public version of this software is a free platform to publicly share and explore data visualizations online.

For this project, the tables of Change Factors provided in Appendix I and II have been made available using the following Tableau Tool:

[Updating the Statewide Extreme Rainfall Projections | Tableau Public](#)

A snapshot of this interactive tool is shown below:

