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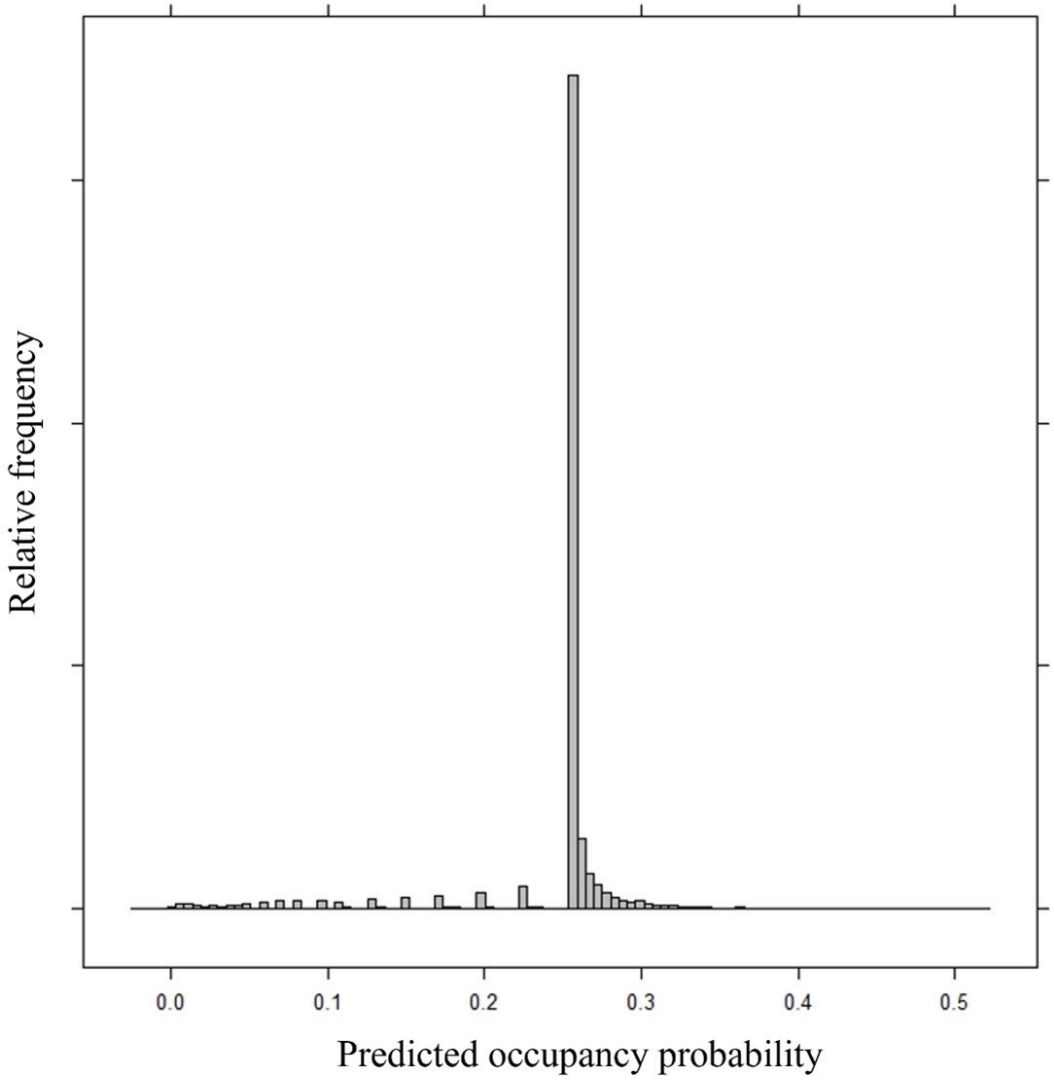
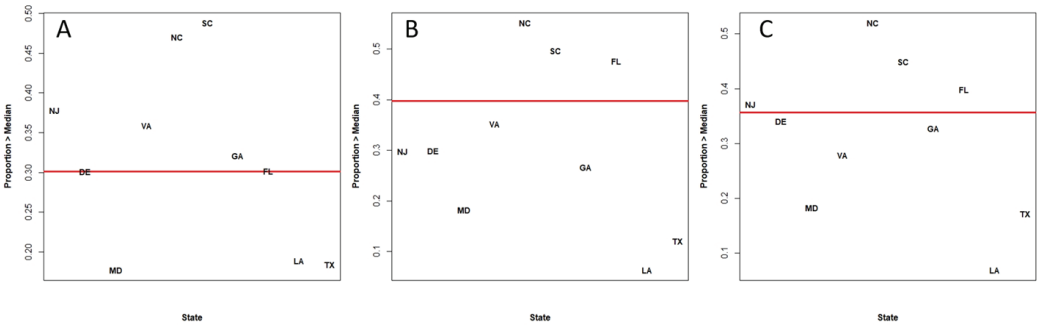
Mapping Habitat Quality and Threats for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*)

Electronic supplement to: Bryan S. Stevens and Courtney J. Conway. 2021. Mapping Habitat Quality and Threats for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*). Waterbirds 44: 245-256.

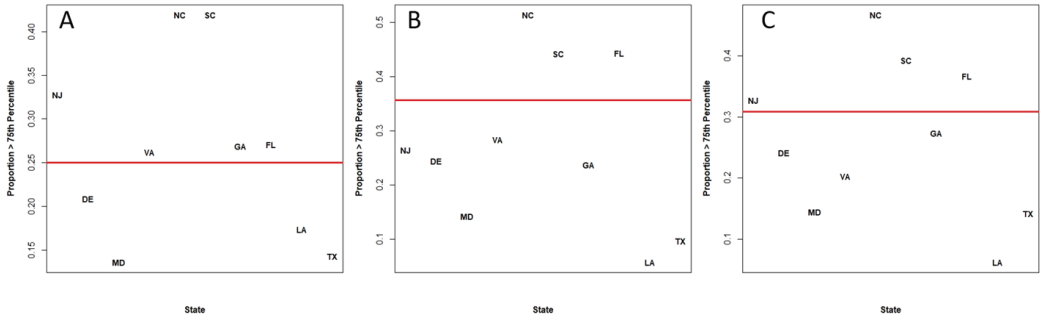
APPENDIX



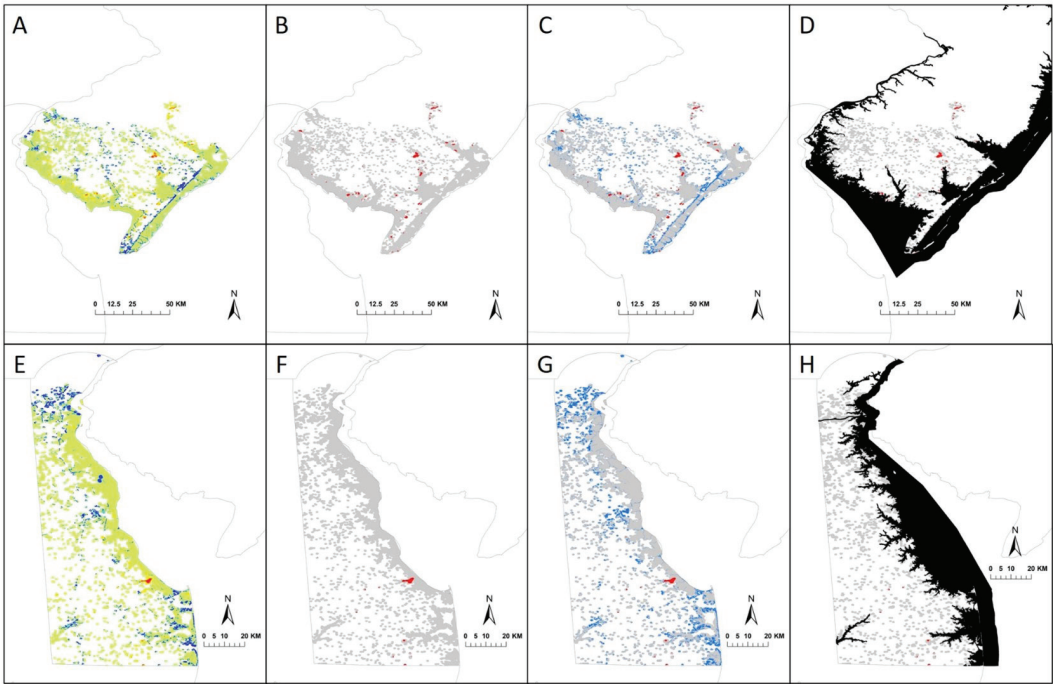
Online Appendix Figure A1. Distribution of predicted occupancy probability among all 30-m pixels where Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality was projected in the eastern USA.



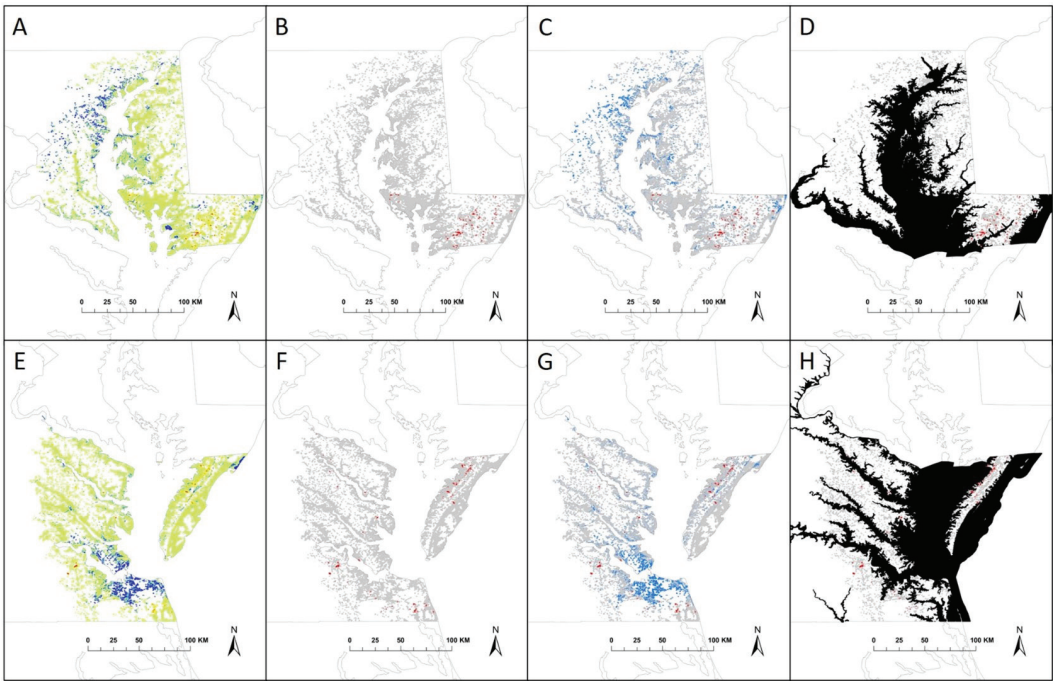
Online Appendix Figure A2. Plot of the proportion of 30-m pixel with values > the range-wide median occupancy probability, summarized by state, for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*), as compared to the same metric calculated range-wide (red lines). Each metric was calculated over the species' entire coastal range and for each state (A), as well as within federally owned land (B) and protected areas (C) within those spatial extents.



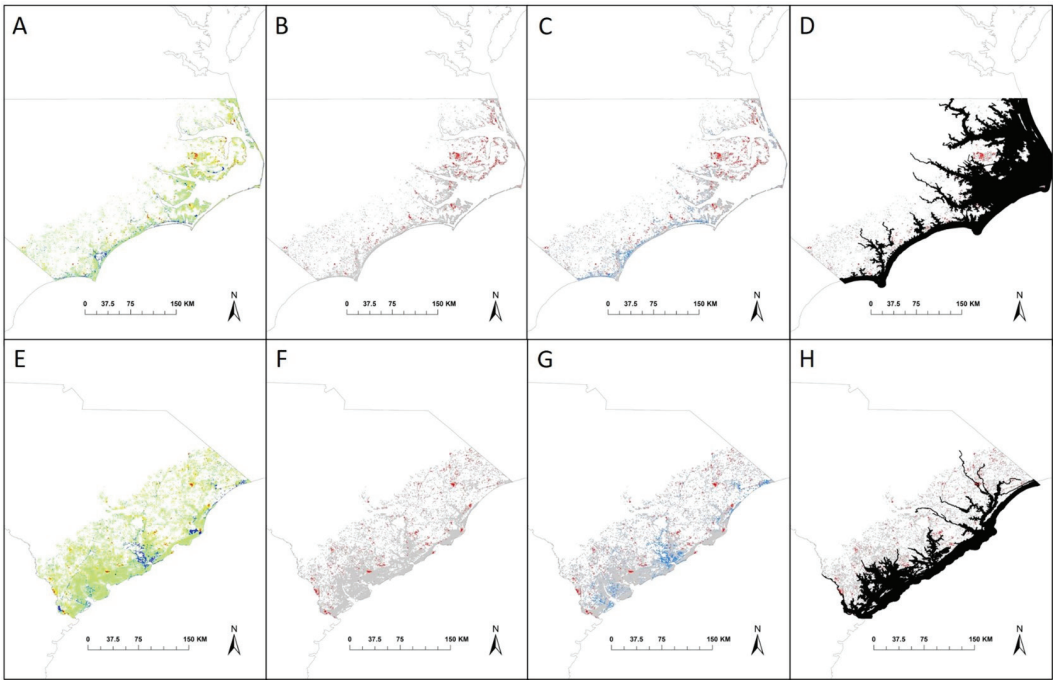
Online Appendix Figure A3. Plot of the proportion of 30-m pixel with values > the 75th percentile of the distribution of range-wide occupancy probabilities, summarized by state, for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*), as compared to the same metric calculated range-wide (red lines). Each metric was calculated over the species' entire coastal range and for each state (A), as well as within federally owned land (B) and protected areas (C) within those spatial extents.



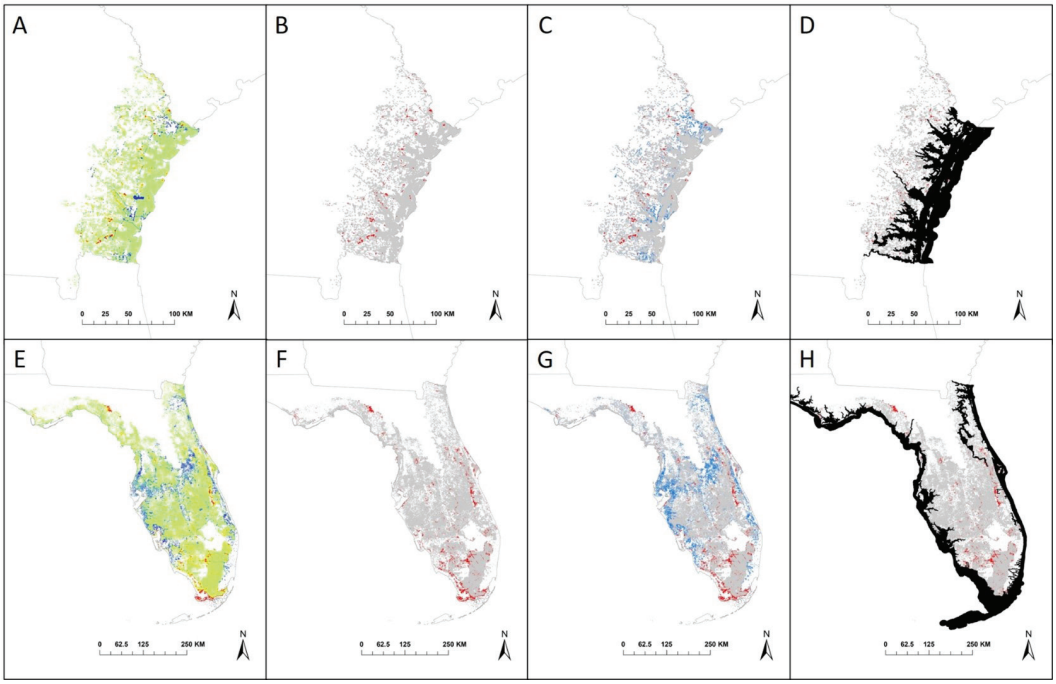
Online Appendix Figure A4. Maps of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality and threats for New Jersey and Delaware, USA: (A) predicted occupancy probability in New Jersey (cooler colors = smaller values and warmer colors = larger values); (B) map of New Jersey hotspots where pixel values were > 1-SD above the range-wide mean (red); (C) same map as (B) but also showing human development (blue); (D) same map as (B) but also showing a 0.61 m sea level rise (black); (E) predicted occupancy probability in Delaware; (F) map of Delaware hotspots where pixel values were > 1-SD above the range-wide mean (red); (G) same map as (F) but also showing human development (blue); (H) same map as (F) but also showing a 0.61 m sea level rise (black).



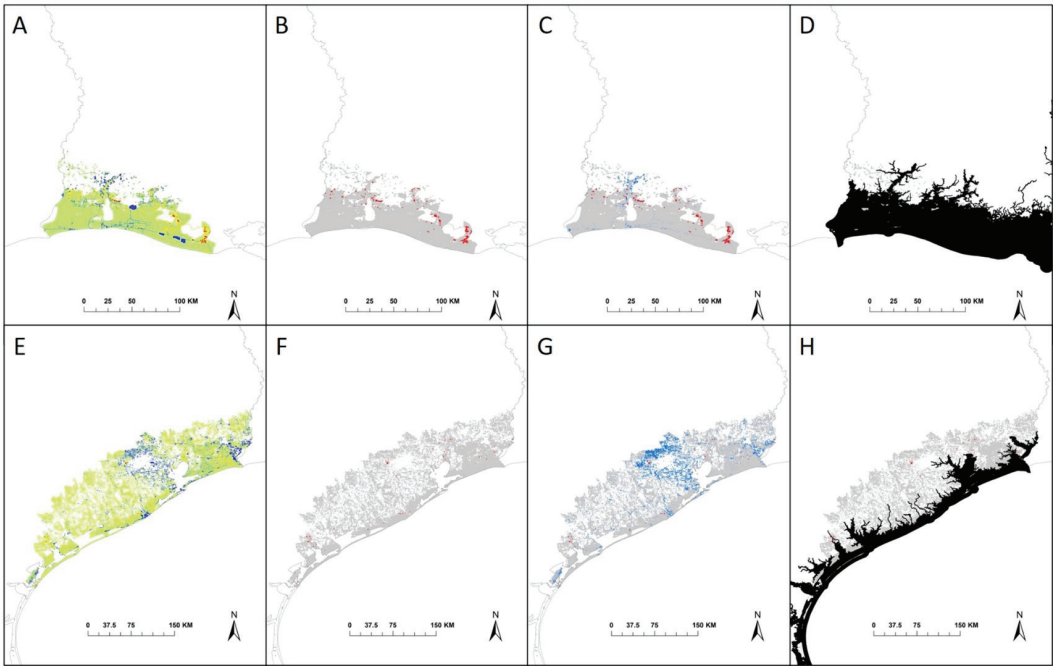
Online Appendix Figure A5. Maps of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality and threats for Maryland and Virginia, USA: (A) predicted occupancy probability in Maryland (cooler colors = smaller values and warmer colors = larger values); (B) map of Maryland hotspots where pixel values were > 1-SD above the range-wide mean occupancy probability (red); (C) same map as (B) but also showing human development superimposed (blue); (D) same map as (B) but also showing a 0.61 m projected sea level rise superimposed (black); (E) predicted occupancy probability in Virginia; (F) map of Virginia hotspots where pixel values were > 1-SD above the range-wide mean occupancy probability (red); (G) same map as (F) but also showing human development superimposed (blue); (H) same map as (F) but also showing a 0.61 m projected sea level rise superimposed (black).



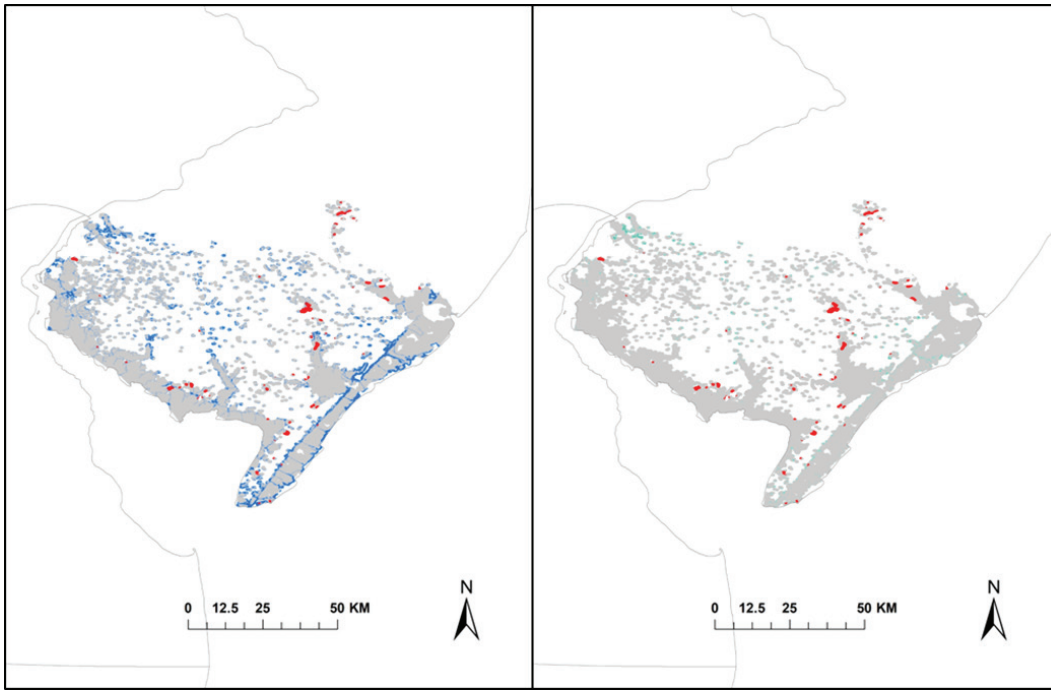
Online Appendix Figure A6. Maps of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality and threats for North and South Carolina, USA: (A) predicted occupancy probability in North Carolina (cooler colors = smaller values and warmer colors = larger values); (B) map of North Carolina hotspots where pixel values were > 1-SD above the range-wide mean (red); (C) same map as (B) but also showing human development (blue); (D) same map as (B) but also showing a 0.61 m sea level rise (black); (E) predicted occupancy probability in South Carolina; (F) map of South Carolina hotspots where pixel values were > 1-SD above the range-wide mean (red); (G) same map as (F) but also showing human development (blue); (H) same map as (F) but also showing a 0.61 m projected sea level rise (black).



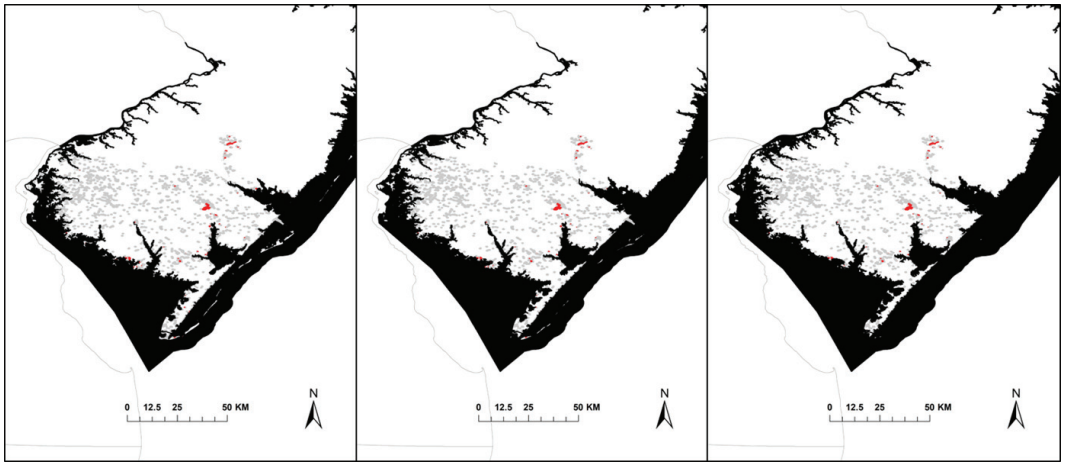
Online Appendix Figure A7. Maps of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality and threats for Georgia and Florida, USA: (A) predicted occupancy probability in Georgia (cooler colors = smaller values and warmer colors = larger values); (B) map of Georgia hotspots where pixel values were > 1-SD above the range-wide mean occupancy probability (red); (C) same map as (B) but also showing human development superimposed (blue); (D) same map as (B) but also showing a 0.61 m projected sea level rise superimposed (black); (E) predicted occupancy probability in Florida; (F) map of Florida hotspots where pixel values were > 1-SD above the range-wide mean occupancy probability (red); (G) same map as (F) but also showing human development superimposed (blue); (H) same map as (F) but also showing a 0.61 m projected sea level rise superimposed (black).



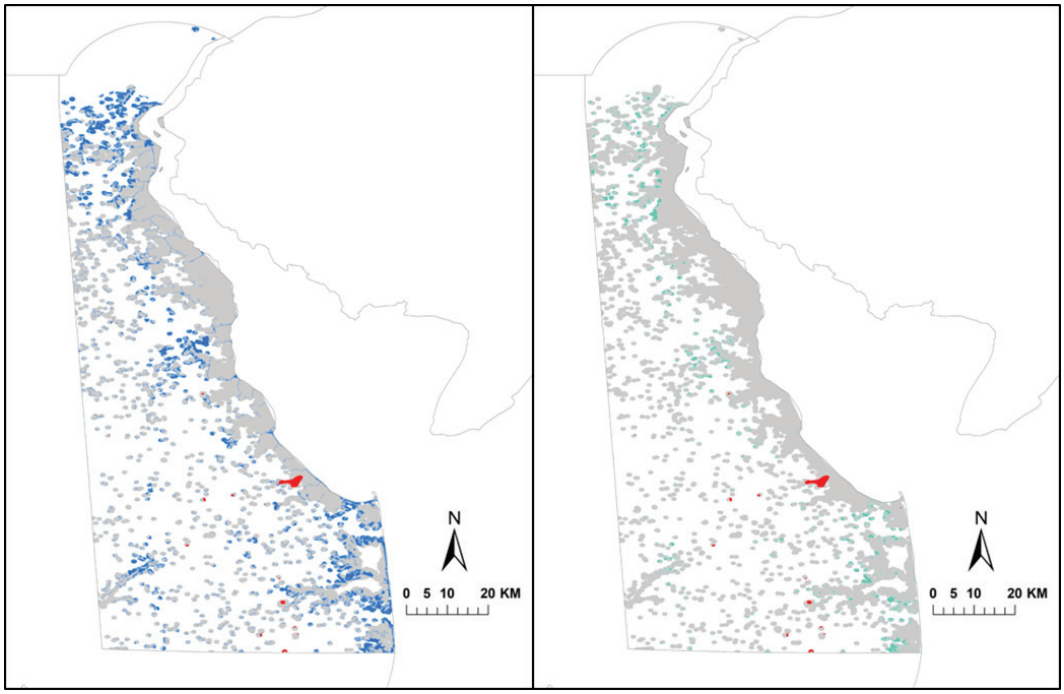
Online Appendix Figure A8. Maps of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality and threats for Louisiana and Texas, USA: (A) predicted occupancy probability in Louisiana (cooler colors = smaller values and warmer colors = larger values); (B) map of Louisiana hotspots where pixel values were > 1-SD above the range-wide mean occupancy probability (red); (C) same map as (B) but also showing human development superimposed (blue); (D) same map as (B) but also showing a 0.61 m projected sea level rise superimposed (black); (E) predicted occupancy probability in Texas; (F) map of Texas hotspots where pixel values were > 1-SD above the range-wide mean occupancy probability (red); (G) same map as (F) but also showing human development superimposed (blue); (H) same map as (F) but also showing a 0.61 m projected sea level rise superimposed (black).



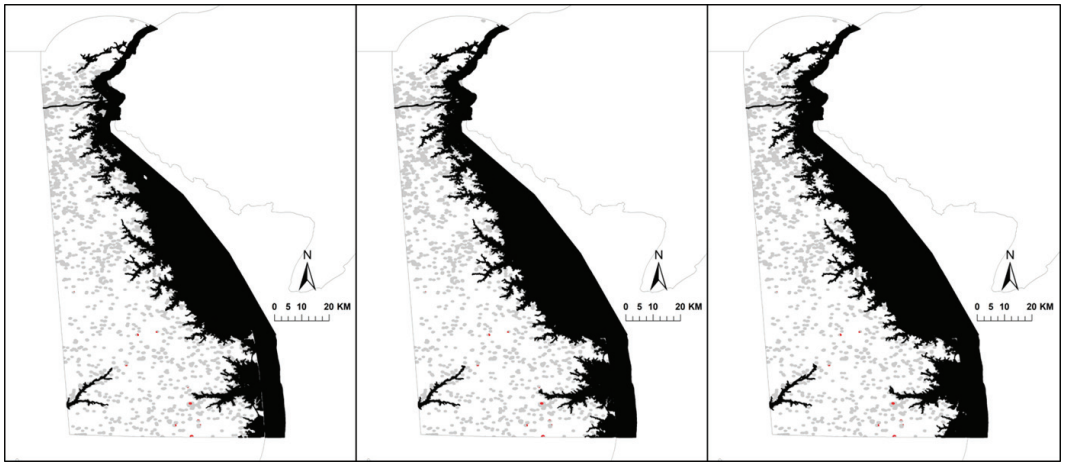
Online Appendix Figure A9. Maps of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality hotspots for New Jersey, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



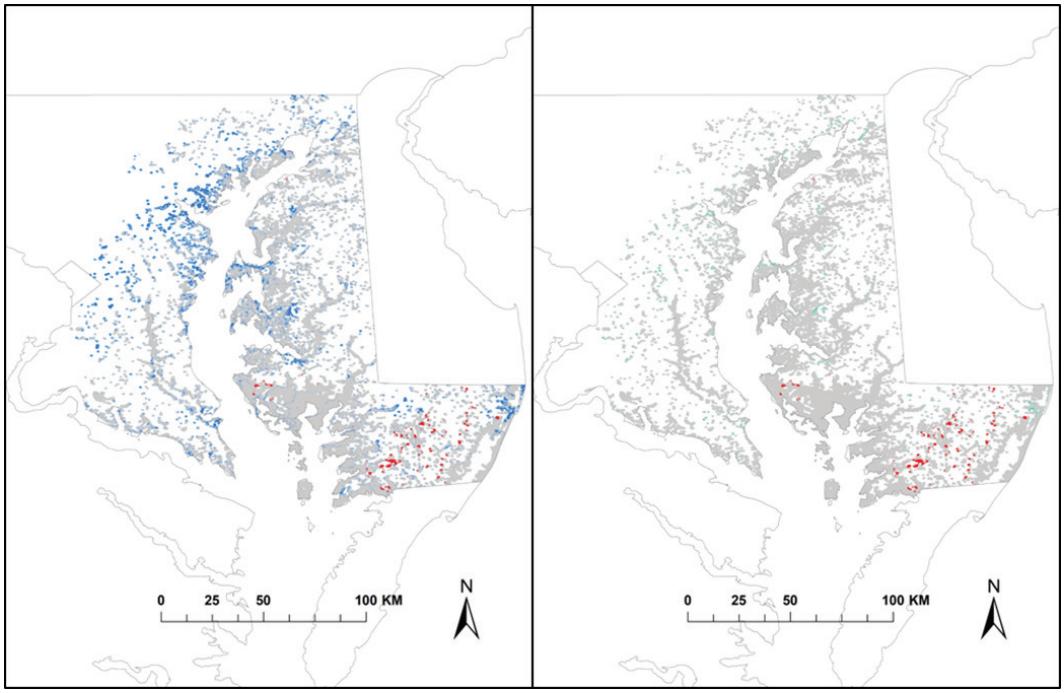
Online Appendix Figure A10. Maps of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality hotspots for New Jersey, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).



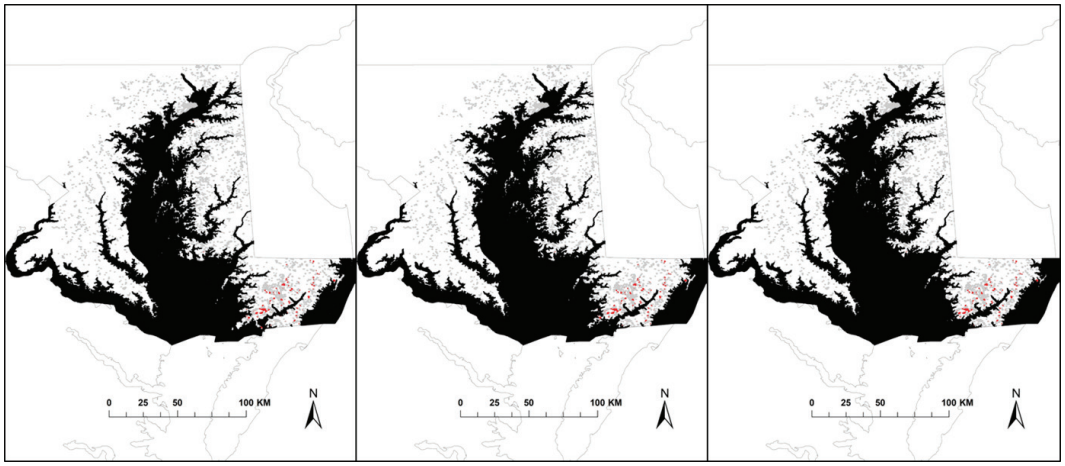
Online Appendix Figure A11. Maps of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality hotspots for Delaware, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



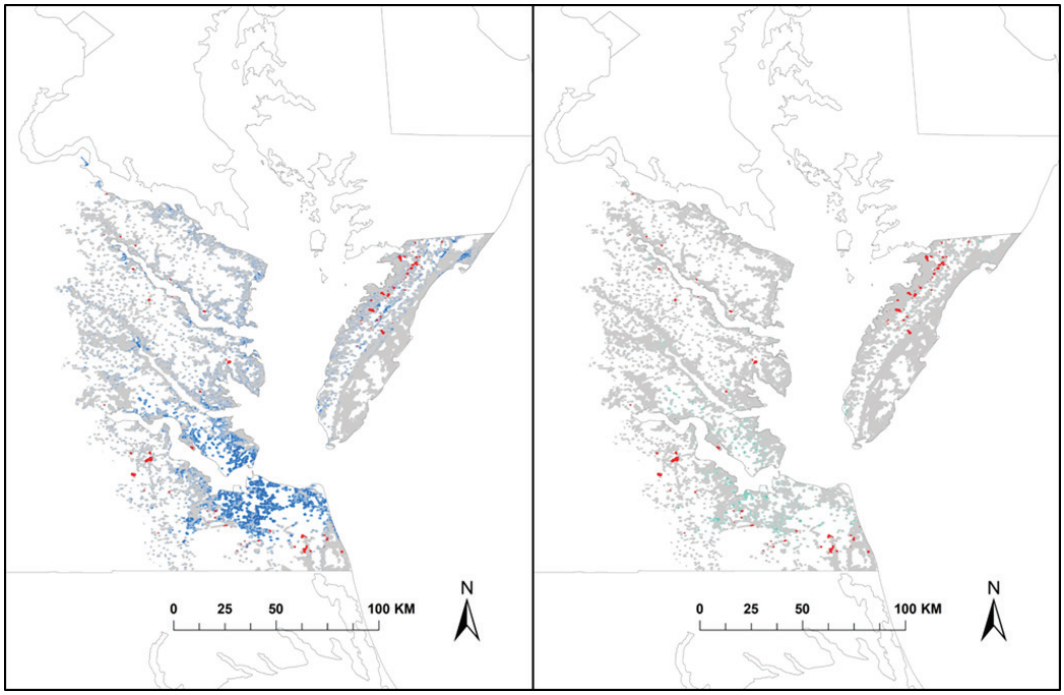
Online Appendix Figure A12. Maps of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) habitat quality hotspots for Delaware, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).



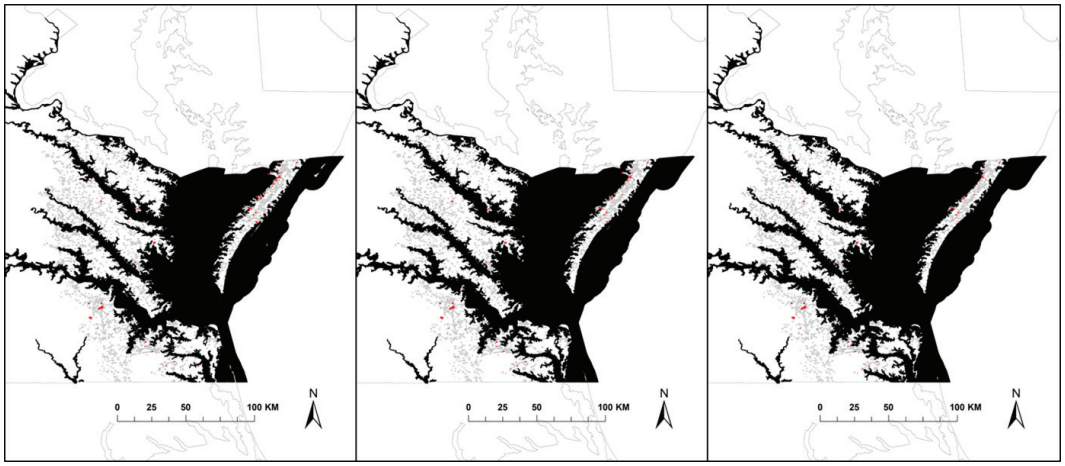
Online Appendix Figure A13. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Maryland, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



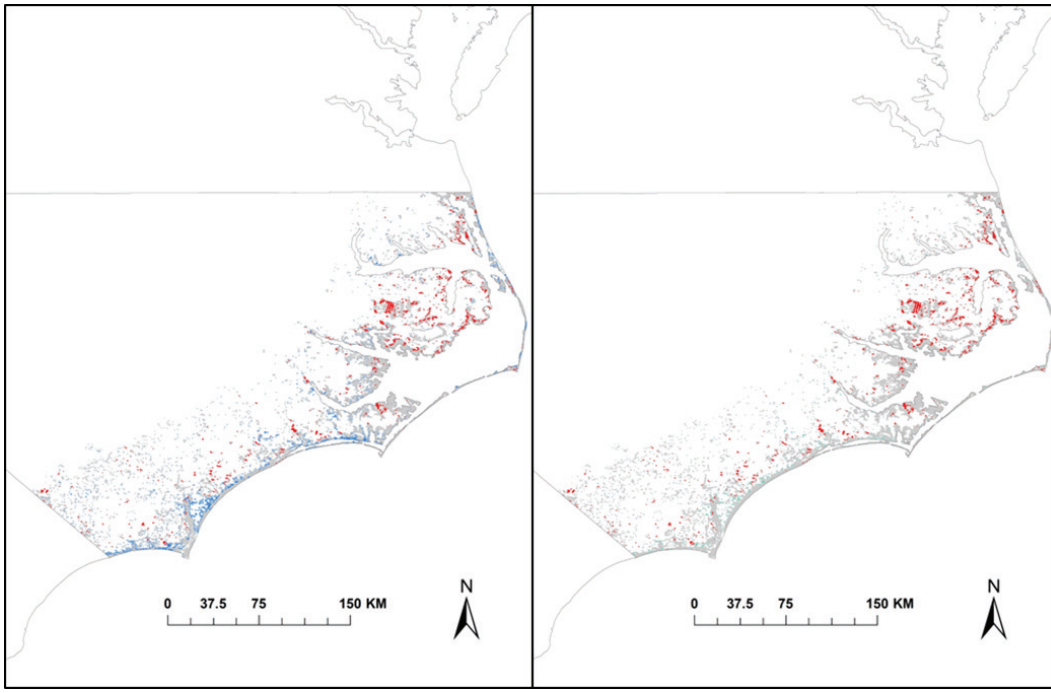
Online Appendix Figure A14. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Maryland, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).



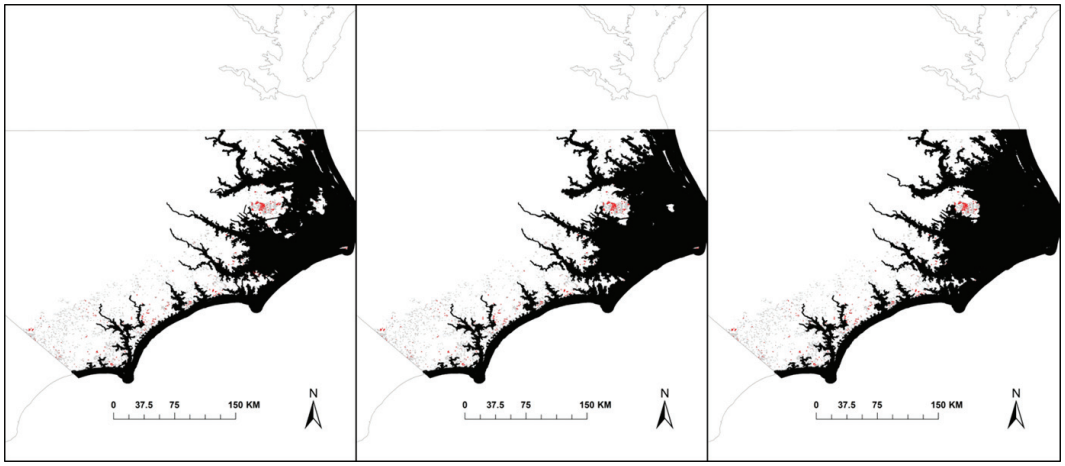
Online Appendix Figure A15. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Virginia, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



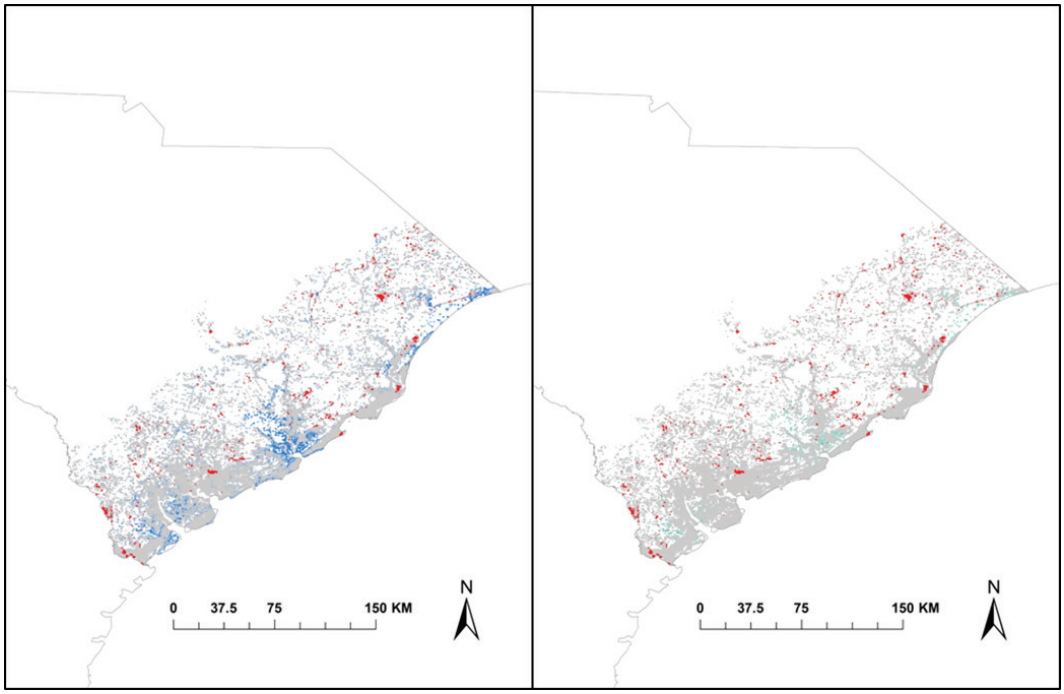
Online Appendix Figure A16. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Virginia, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).



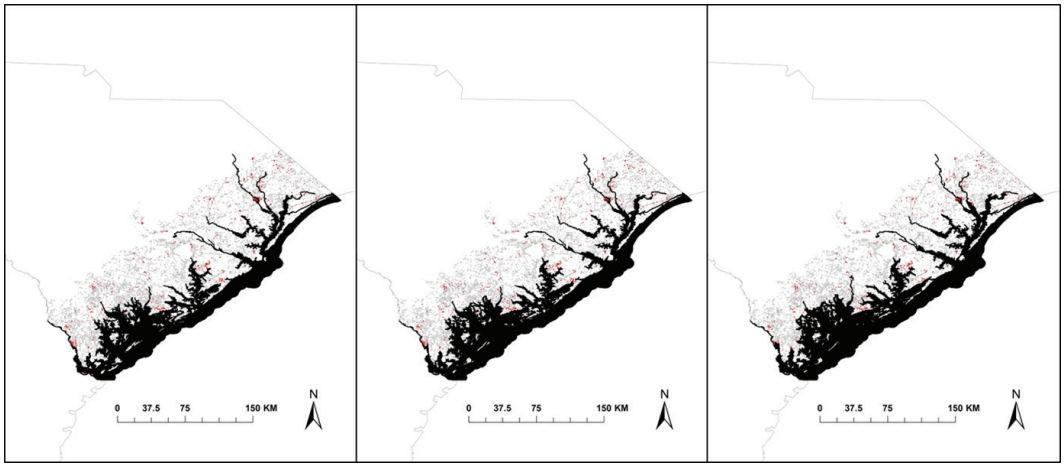
Online Appendix Figure A17. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in North Carolina, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



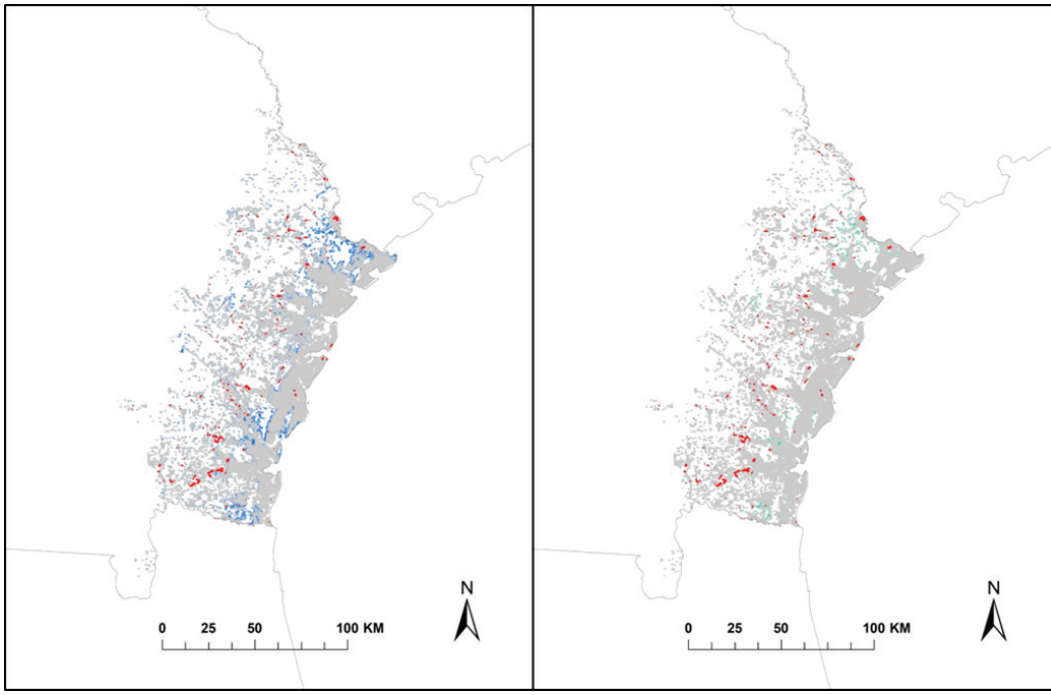
Online Appendix Figure A18. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in North Carolina, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).



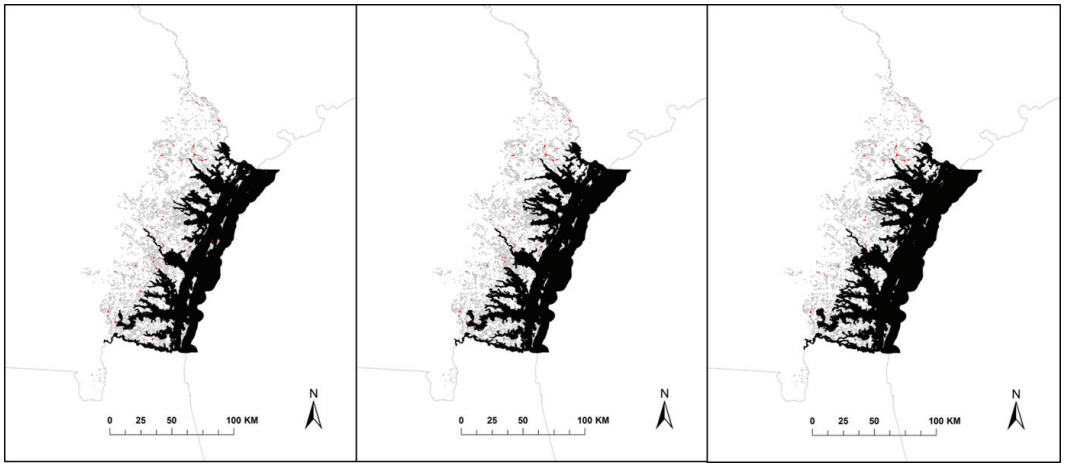
Online Appendix Figure A19. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in South Carolina, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



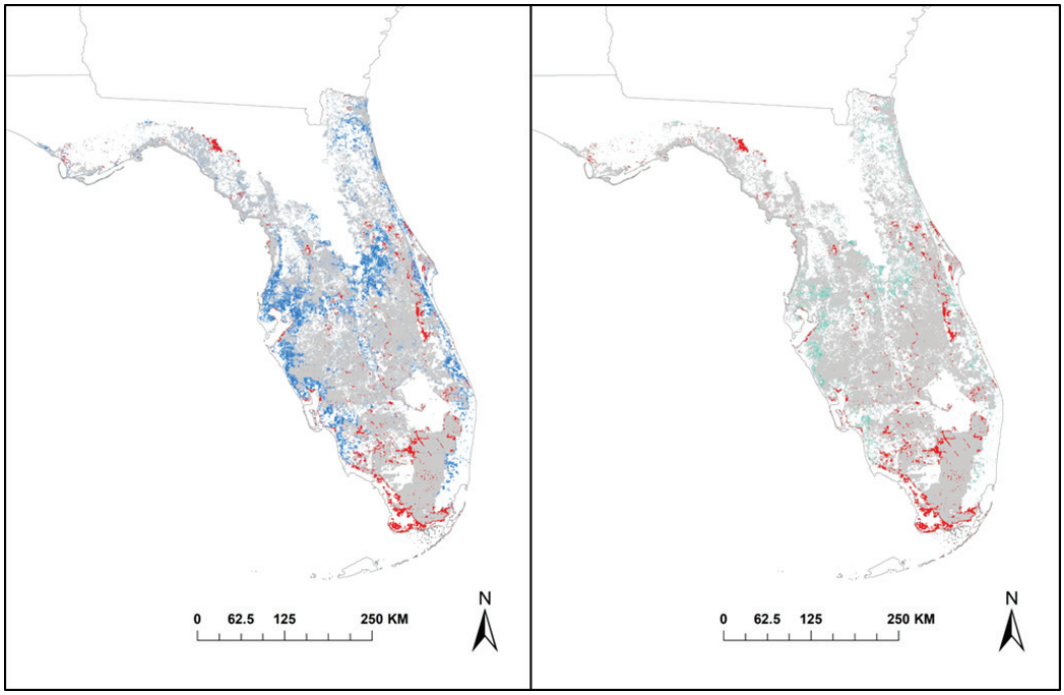
Online Appendix Figure A20. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in South Carolina, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).



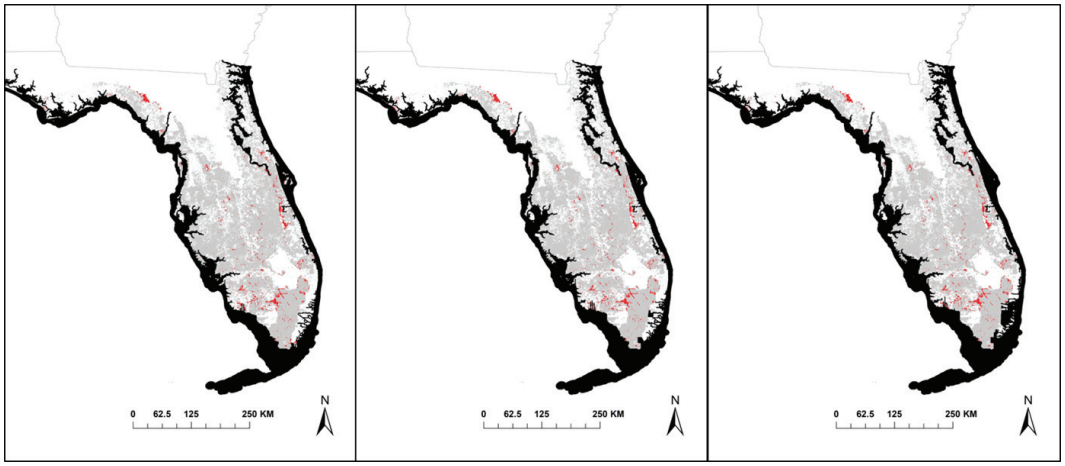
Online Appendix Figure A21. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Georgia, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



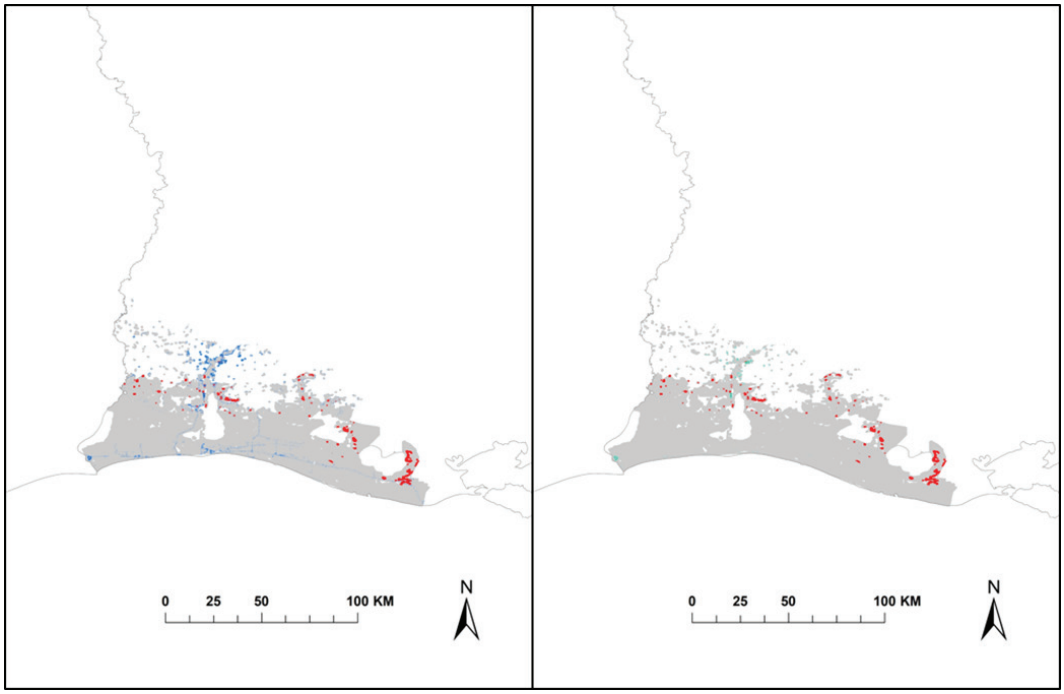
Online Appendix Figure A22. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Georgia, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).



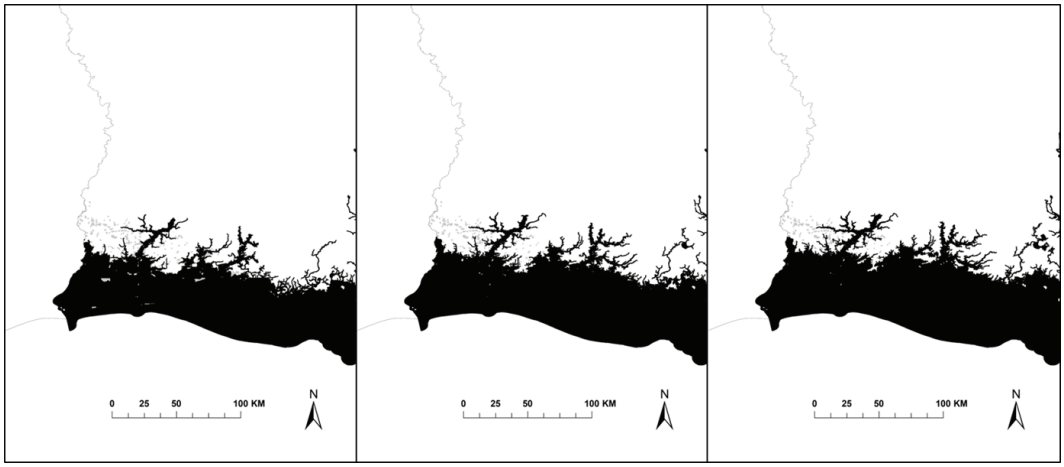
Online Appendix Figure A23. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Florida, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



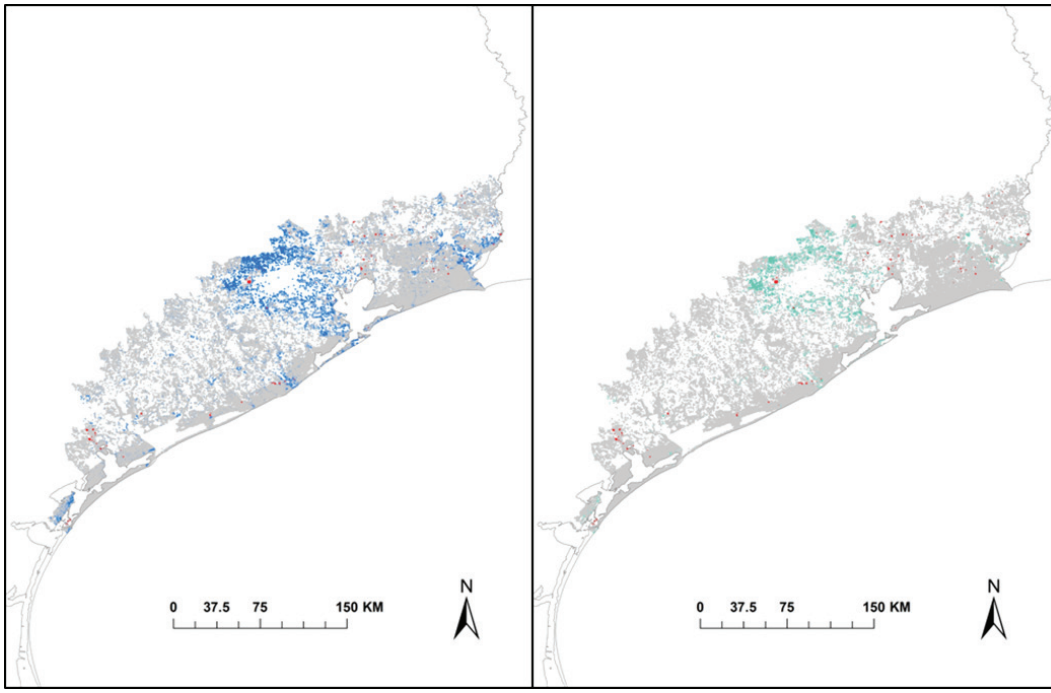
Online Appendix Figure A24. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Florida, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).



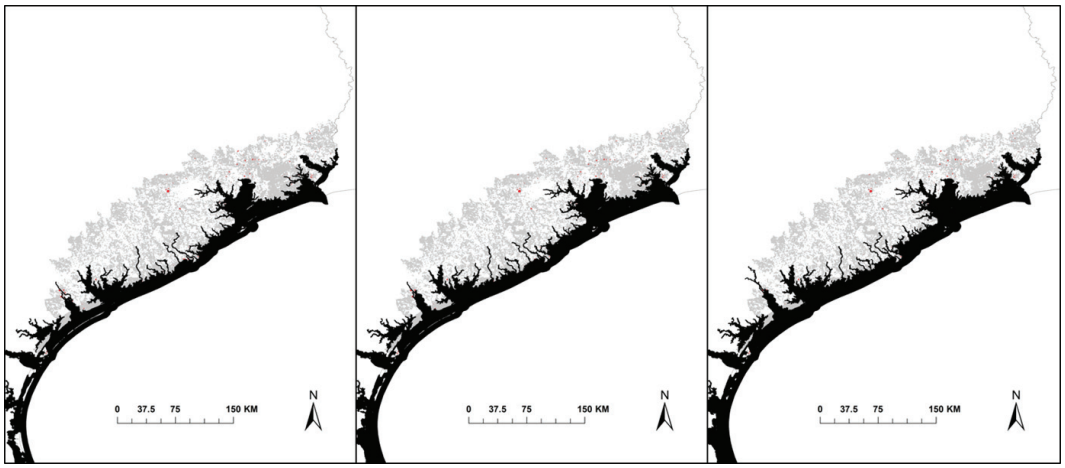
Online Appendix Figure A25. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Louisiana, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



Online Appendix Figure A26. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Louisiana, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).



Online Appendix Figure A27. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Texas, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with human development superimposed in dark blue (left) indicating current development, and development change index superimposed in light green (right) indicating pixels that changed development status during the 2001-2016 period.



Online Appendix Figure A28. Maps of habitat quality hotspots for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) in Texas, USA, where pixel values were > 1-SD above the range-wide mean occupancy probability (red), with projected sea level rises superimposed in black: 0.61-m scenario (left), 1.22-m scenario (middle), and 1.83-m scenario (right).