Appendix C: Power Analysis Results for the Occurrence Probability Model

Caption for figures:
Power curves (top panel) show the estimated power to detect a hotspot/coldspot of various effect sizes for each sample size (number of transect segments) from 1 to 200. Red solid, dashed, and dotted lines represent the estimated power to detect a hotspot of 3, 10, and 20 times the reference prevalence, respectively. Blue solid, dashed, and dotted lines represent the estimated power to detect a coldspot of ⅓, 1/10, and 1/20 times the reference prevalence, respectively. Red lines that are absent indicate that the estimated power to detect a hotspot was undefined because the effect size times the reference prevalence was greater than one. Boxplots (bottom panel) show the distribution of estimated power to detect a hotspot/coldspot of various effect sizes based on the number of transect segments surveyed within each grid cell for each spatial resolution. The number of grid cells with survey effort and the percentage of grid cells that achieve 80% power to detect a hotspot/coldspot are shown below the horizontal axis.

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List of Figures

Figure C1. Common Eider spring C-5
Figure C2. Common Eider summer C-6
Figure C3. Common Eider fall C-7
Figure C4. Common Eider winter C-8
Figure C5. Surf Scoter spring C-9
Figure C6. Surf Scoter fall C-10
Figure C7. Surf Scoter winter C-11
Figure C8. White-winged Scoter spring C-12
Figure C9. White-winged Scoter fall C-13
Figure C10. White-winged Scoter winter C-14
Figure C11. Long-tailed Duck spring C-15
Figure C12. Long-tailed Duck fall C-16
Figure C13. Long-tailed Duck winter C-17
Figure C14. Razorbill spring C-18
Figure C15. Razorbill summer C-19
Figure C16. Razorbill fall C-20
Figure C17. Razorbill winter C-21
Figure C18. Atlantic Puffin spring C-22
Figure C19. Atlantic Puffin summer C-23
Figure C20. Atlantic Puffin fall C-24
Figure C21. Atlantic Puffin winter C-25
Figure C22. Laughing Gull spring C-26
Figure C23. Laughing Gull summer C-27
Figure C24. Laughing Gull fall C-28
Figure C25. Laughing Gull winter C-29

Figure C26. Herring Gull spring C-30
Figure C27. Herring Gull summer C-31
Figure C28. Herring Gull fall C-32
Figure C29. Herring Gull winter C-33
Figure C30. Least Tern summer C-34
Figure C31. Least Tern fall C-35
Figure C32. Roseate Tern spring C-36
Figure C33. Roseate Tern summer C-37
Figure C34. Roseate Tern fall C-38
Figure C35. Common Tern spring C-39
Figure C36. Common Tern summer C-40
Figure C37. Common Tern fall C-41
Figure C38. Royal Tern spring C-42
Figure C39. Royal Tern summer C-43
Figure C40. Royal Tern fall C-44
Figure C41. Red-throated Loon spring C-45
Figure C42. Red-throated Loon fall C-46
Figure C43. Red-throated Loon winter C-47
Figure C44. Common Loon spring C-48
Figure C45. Common Loon summer C-49
Figure C46. Common Loon fall C-50
Figure C47. Common Loon winter C-51
Figure C48. Black-capped Petrel spring C-52
Figure C49. Black-capped Petrel summer C-53
Figure C50. Black-capped Petrel fall C-54
Figure C51. Black-capped Petrel winter C-55

Figure C52. Cory's Shearwater spring C-56
Figure C53. Cory's Shearwater summer C-57
Figure C54. Cory's Shearwater fall C-58
Figure C55. Sooty Shearwater spring C-59
Figure C56. Sooty Shearwater summer C-60
Figure C57. Sooty Shearwater fall C-61
Figure C58. Great Shearwater spring C-62
Figure C59. Great Shearwater summer C-63
Figure C60. Great Shearwater fall C-64
Figure C61. Great Shearwater winter C-65
Figure C62. Audubon's Shearwater spring C-66
Figure C63. Audubon's Shearwater summer C-67
Figure C64. Audubon's Shearwater fall C-68
Figure C65. Audubon's Shearwater winter C-69
Figure C66. Northern Gannet spring C-70
Figure C67. Northern Gannet summer C-71
Figure C68. Northern Gannet fall C-72
Figure C69. Northern Gannet winter C-73

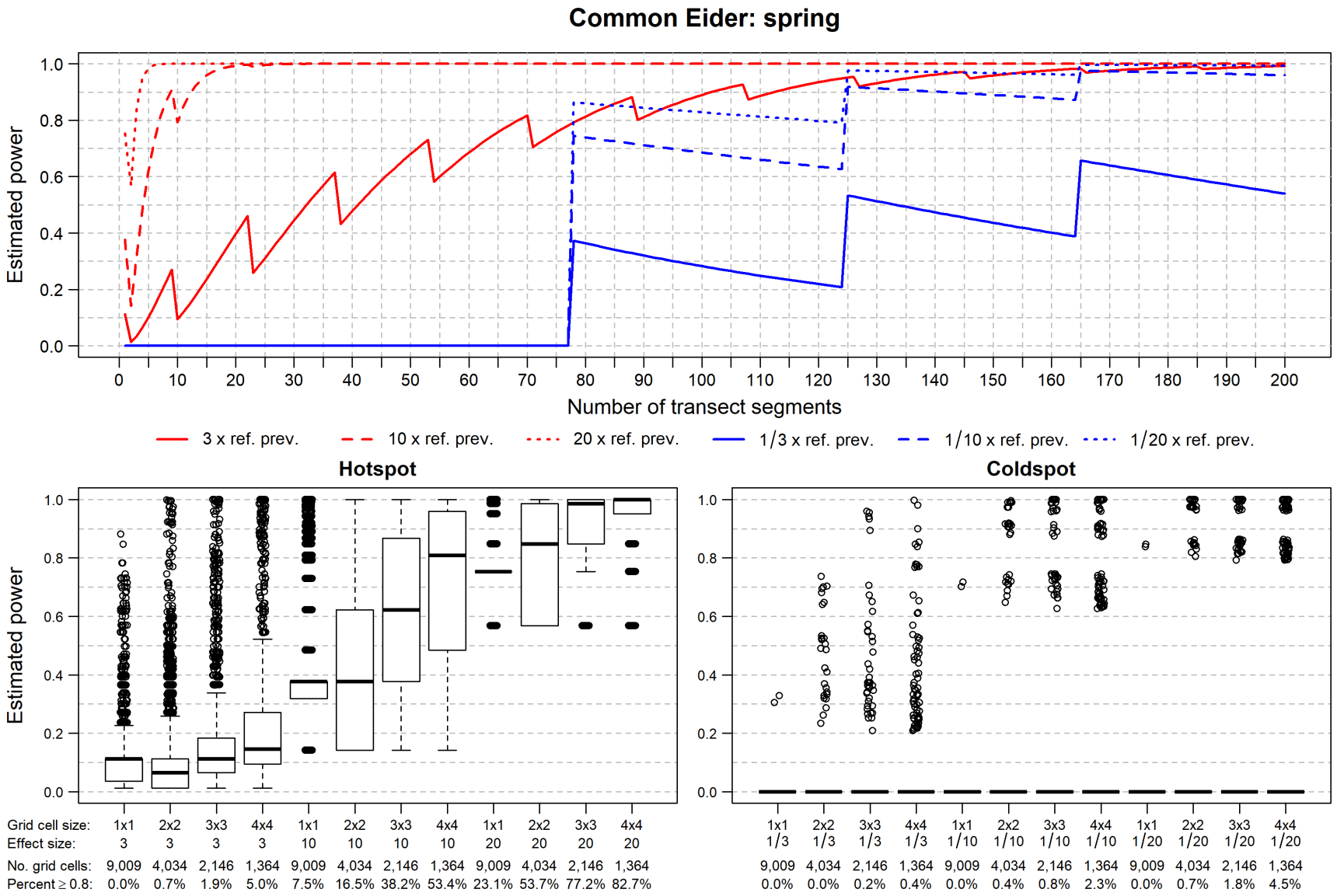


Figure C1. Power analysis results for Common Eider during spring based on the occurrence probability model (type I error rate = 0.05)

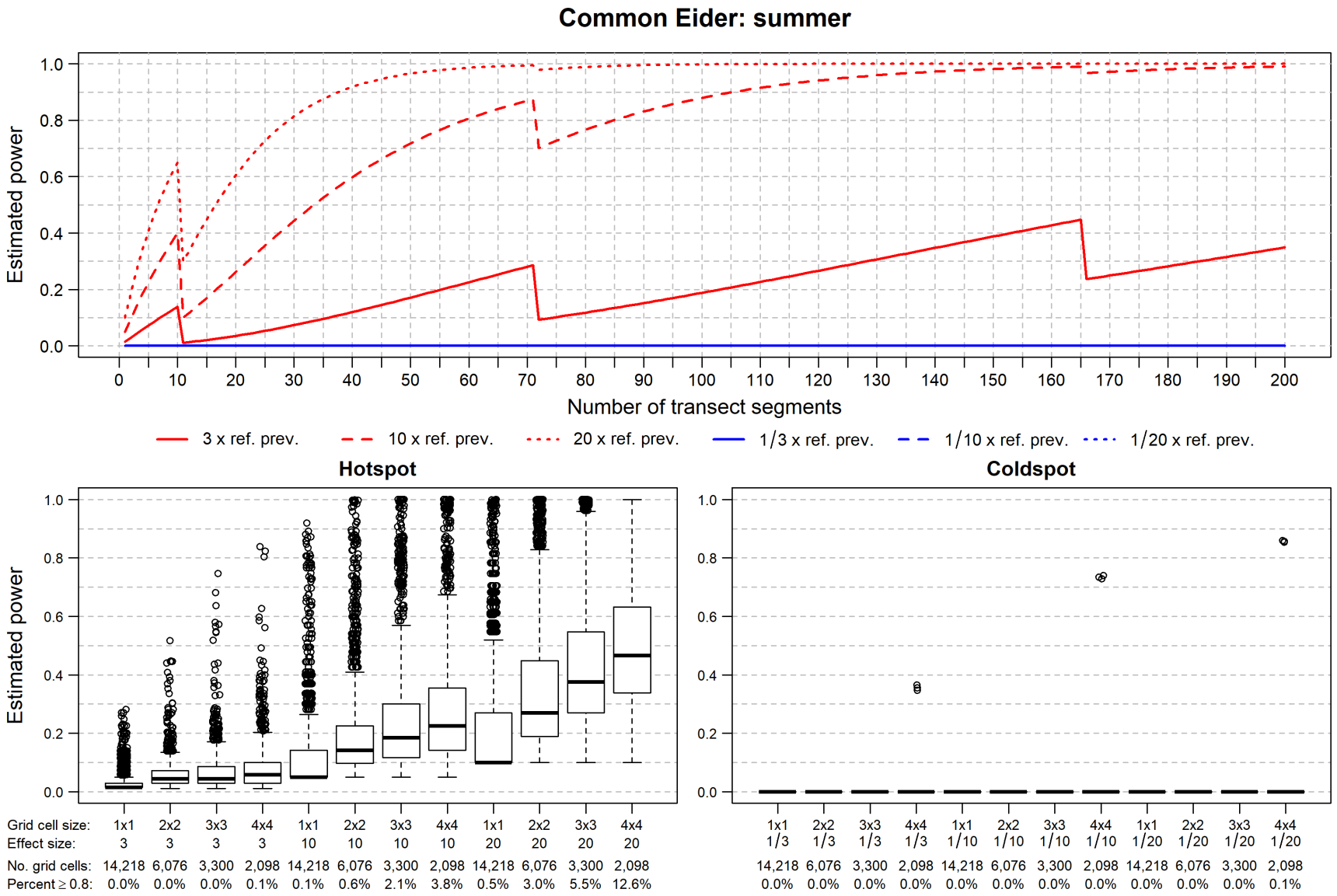


Figure C2. Power analysis results for Common Eider during summer based on the occurrence probability model (type I error rate = 0.05)

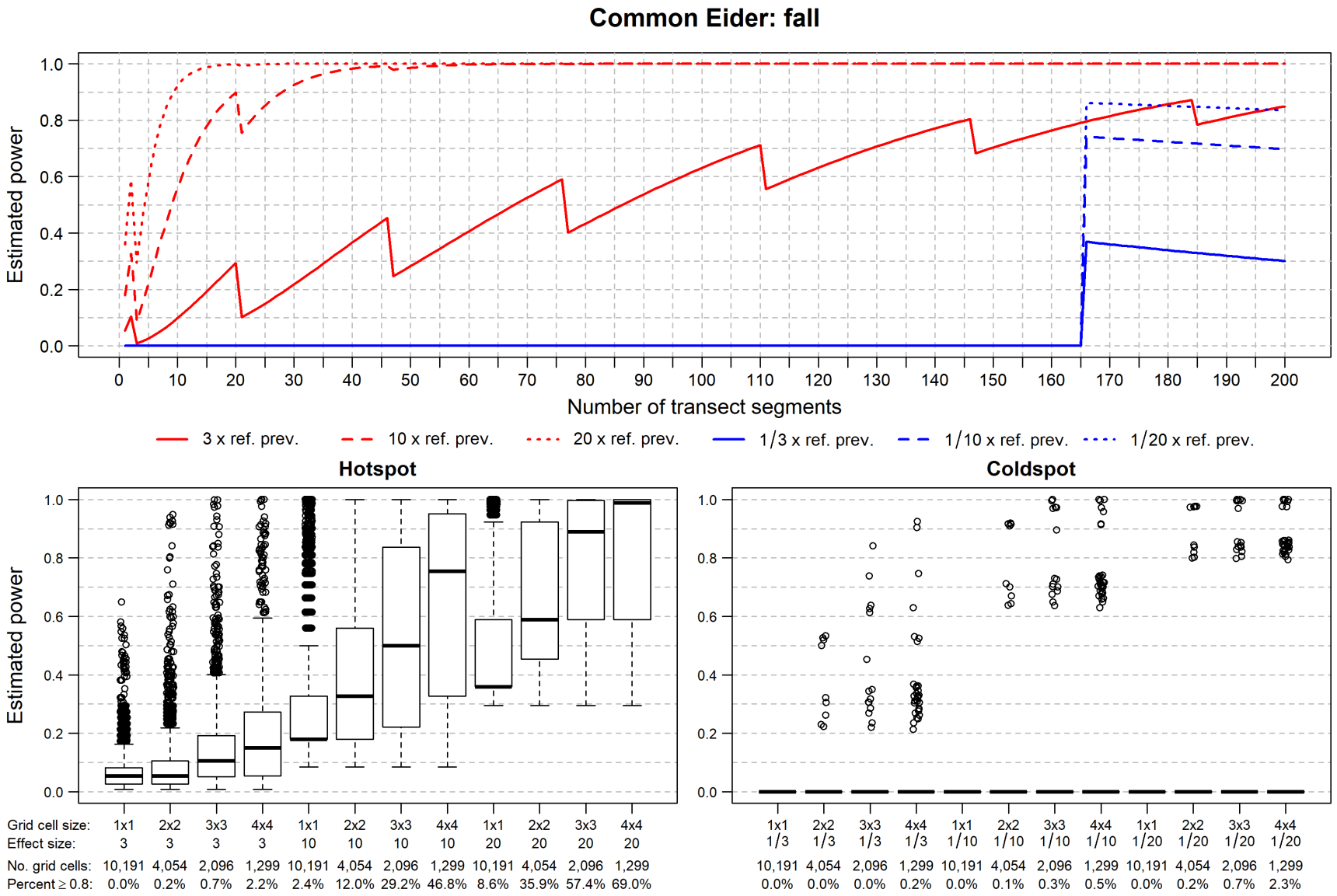


Figure C3. Power analysis results for Common Eider during fall based on the occurrence probability model (type I error rate = 0.05)

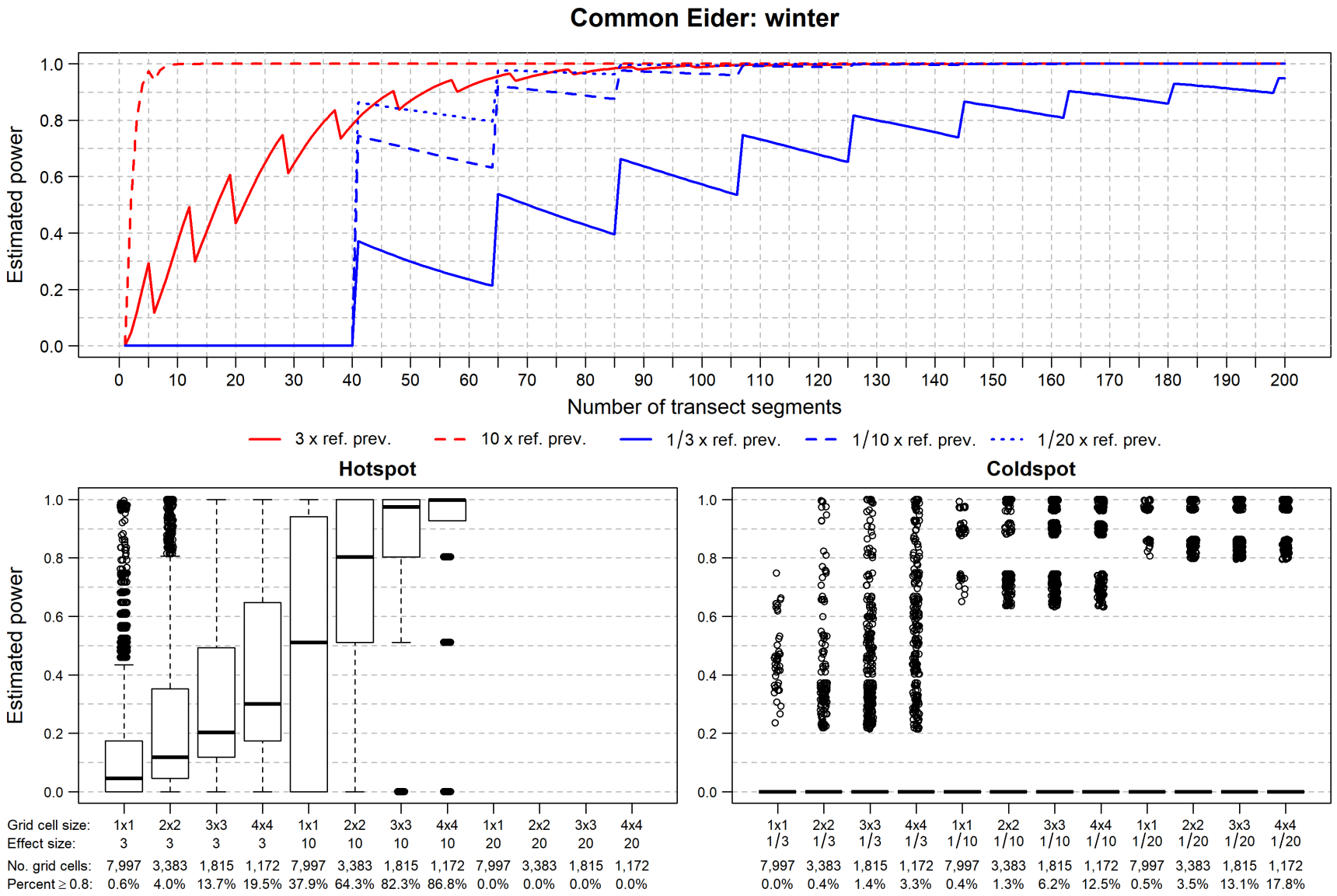
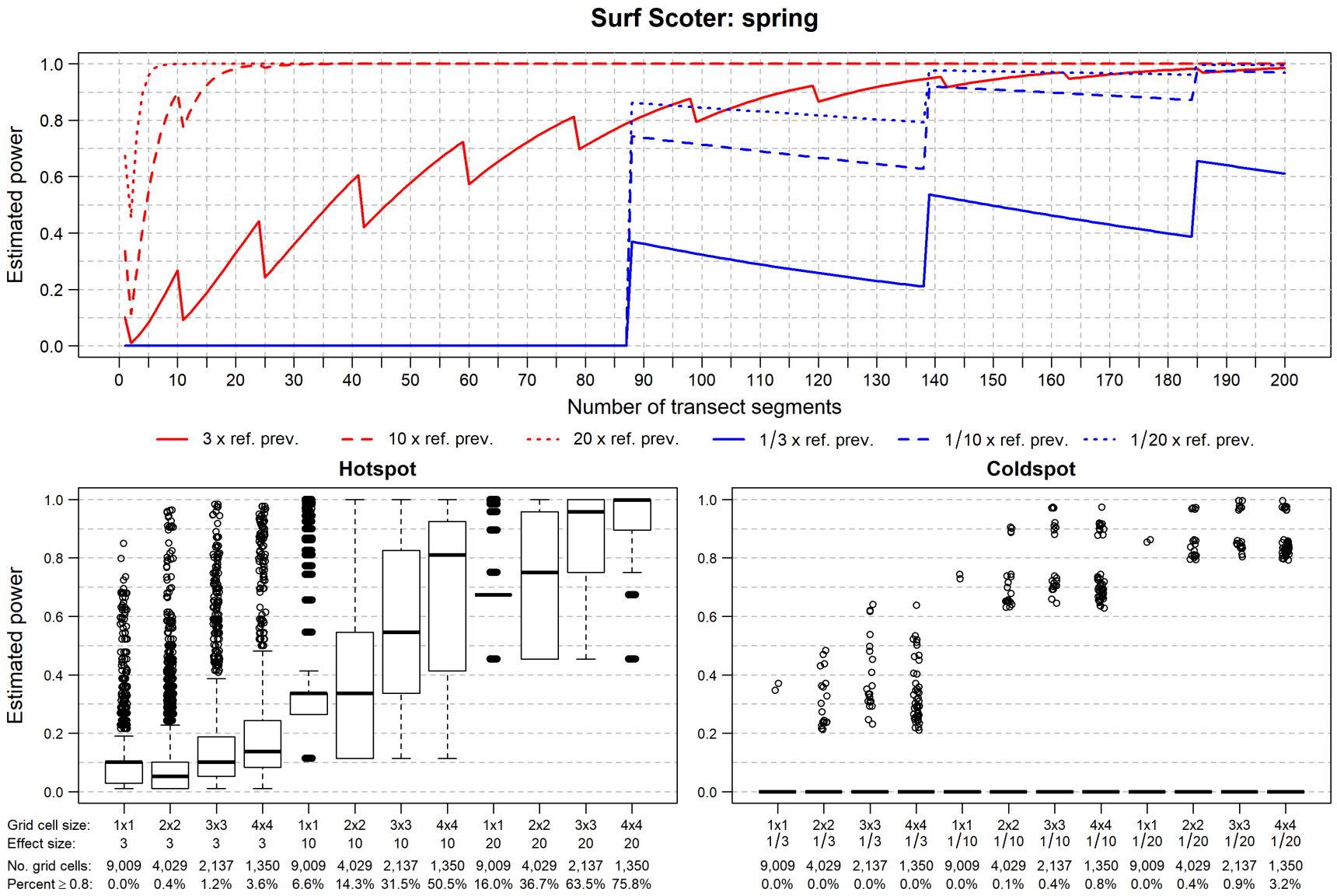


Figure C4. Power analysis results for Common Eider during winter based on the occurrence probability model (type I error rate = 0.05)



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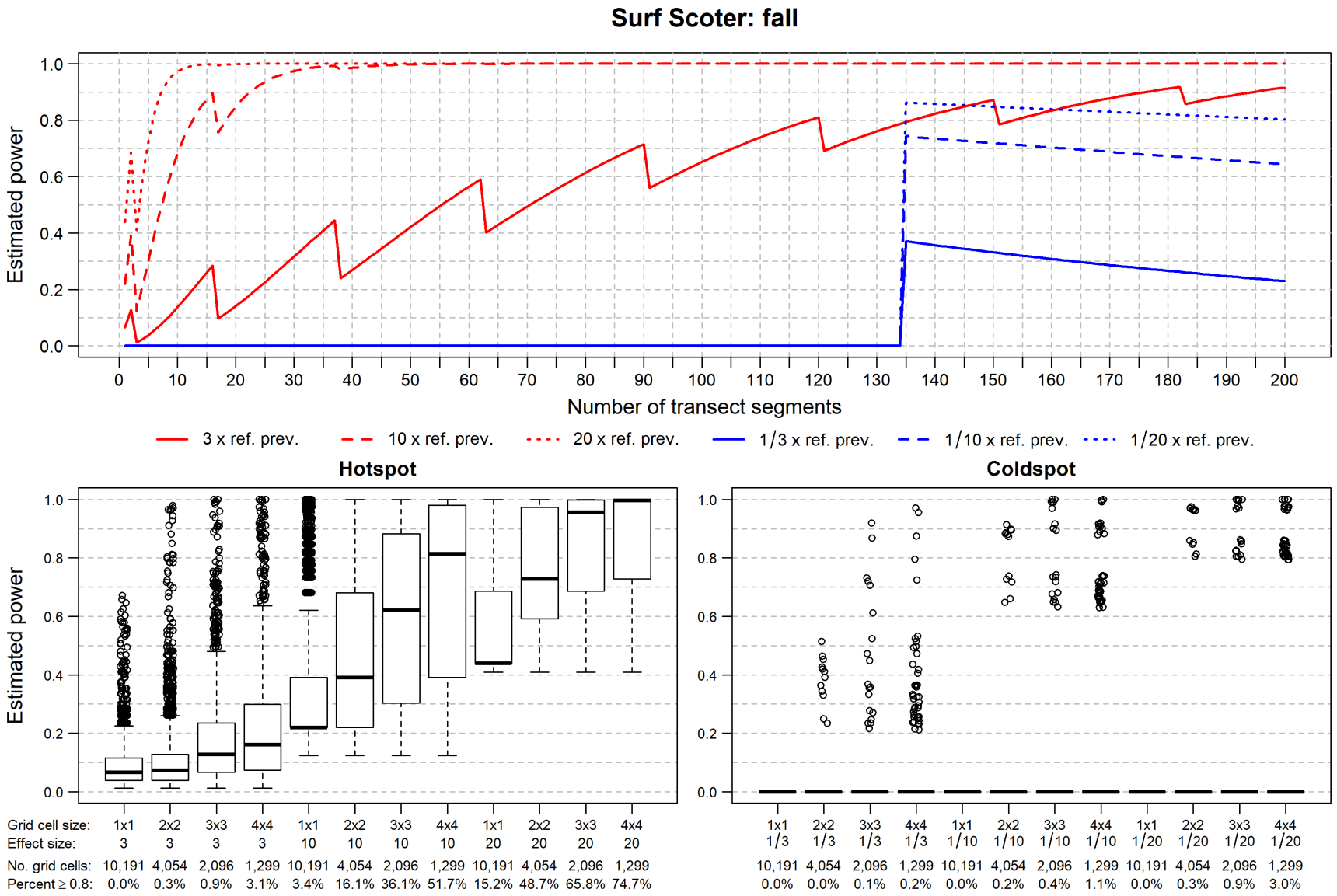


Figure C6. Power analysis results for Surf Scoter during fall based on the occurrence probability model (type I error rate = 0.05)

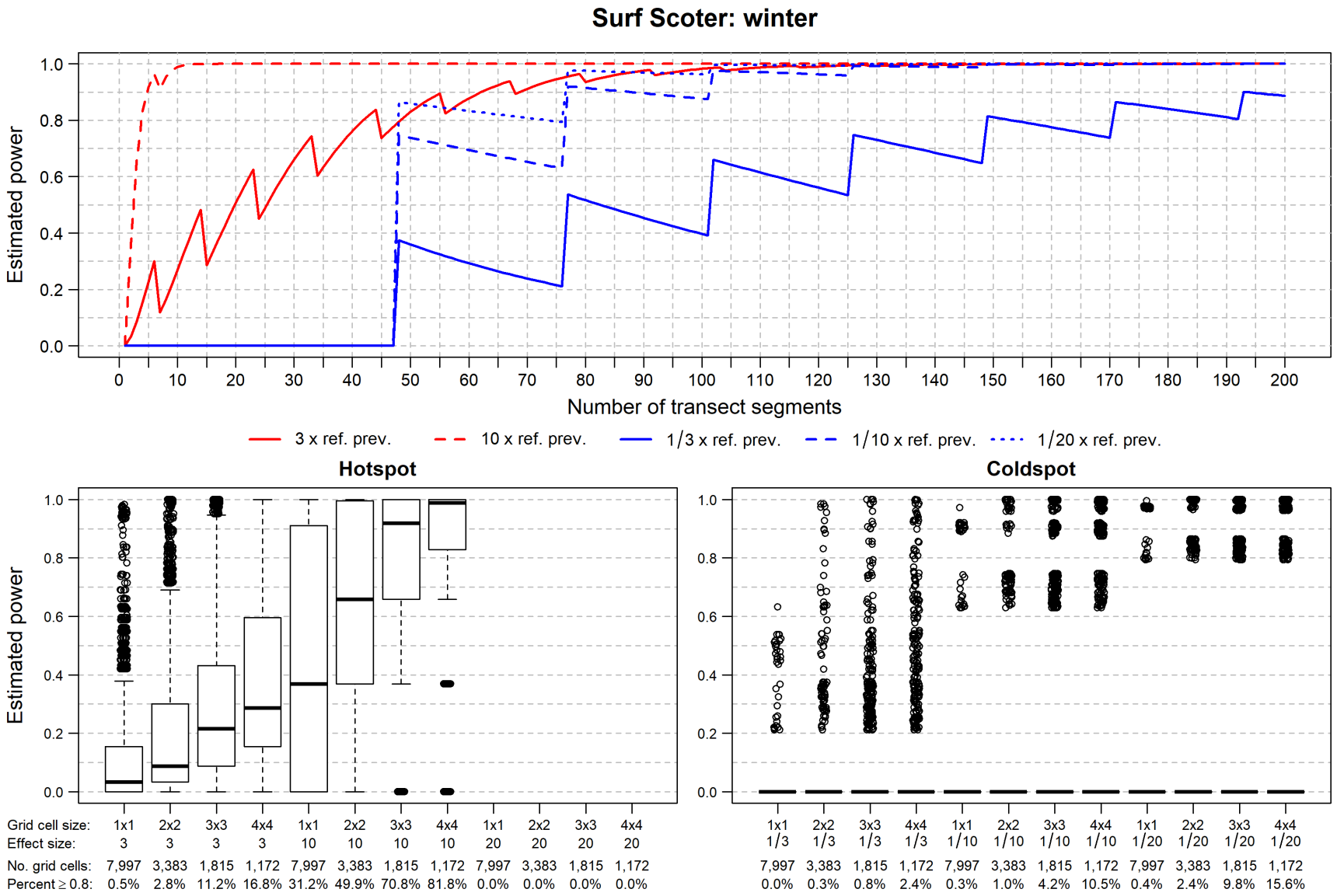


Figure C7. Power analysis results for Surf Scoter during winter based on the occurrence probability model (type I error rate = 0.05)

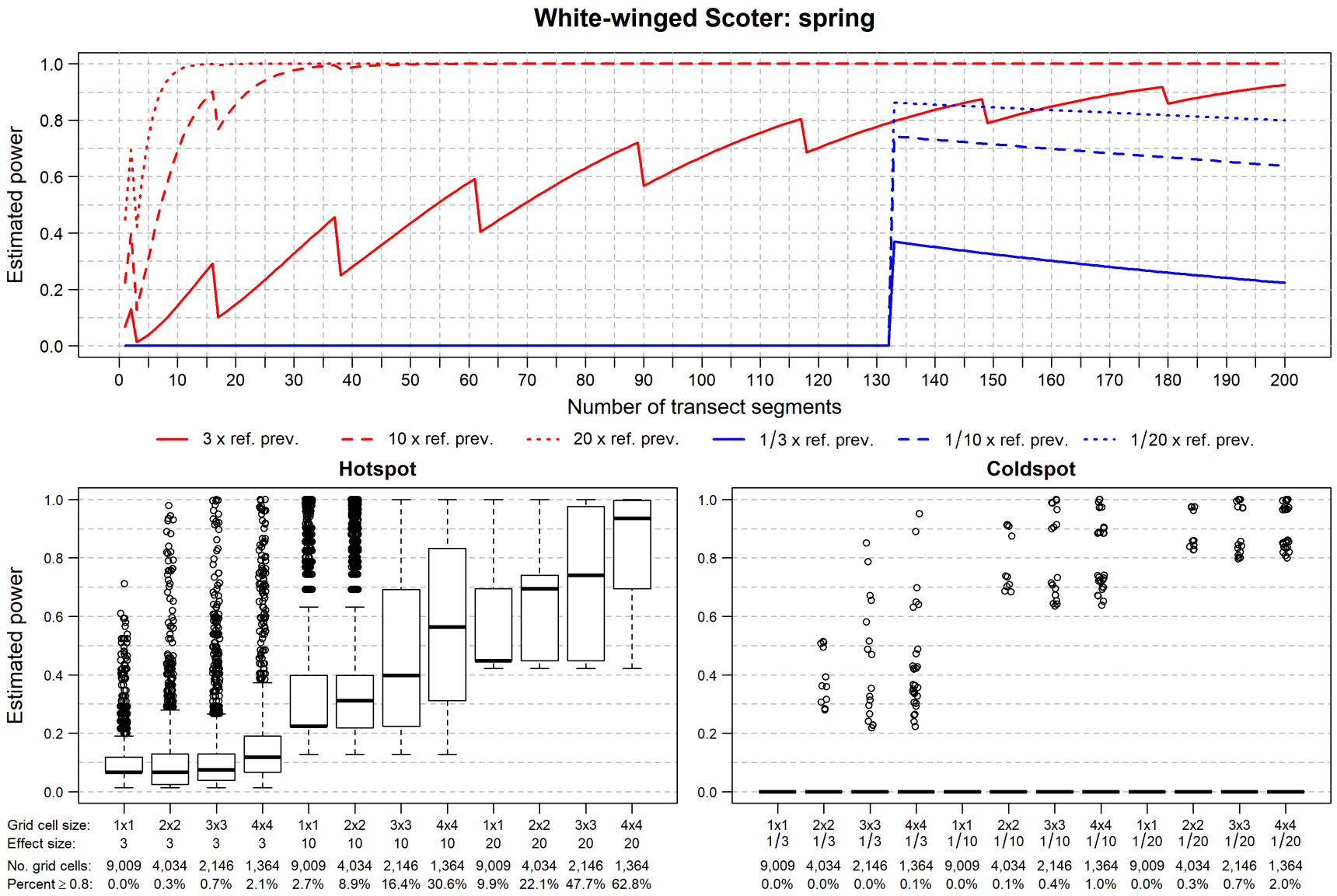


Figure C8. Power analysis results for White-winged Scoter during spring based on the occurrence probability model (type I error rate = 0.05)

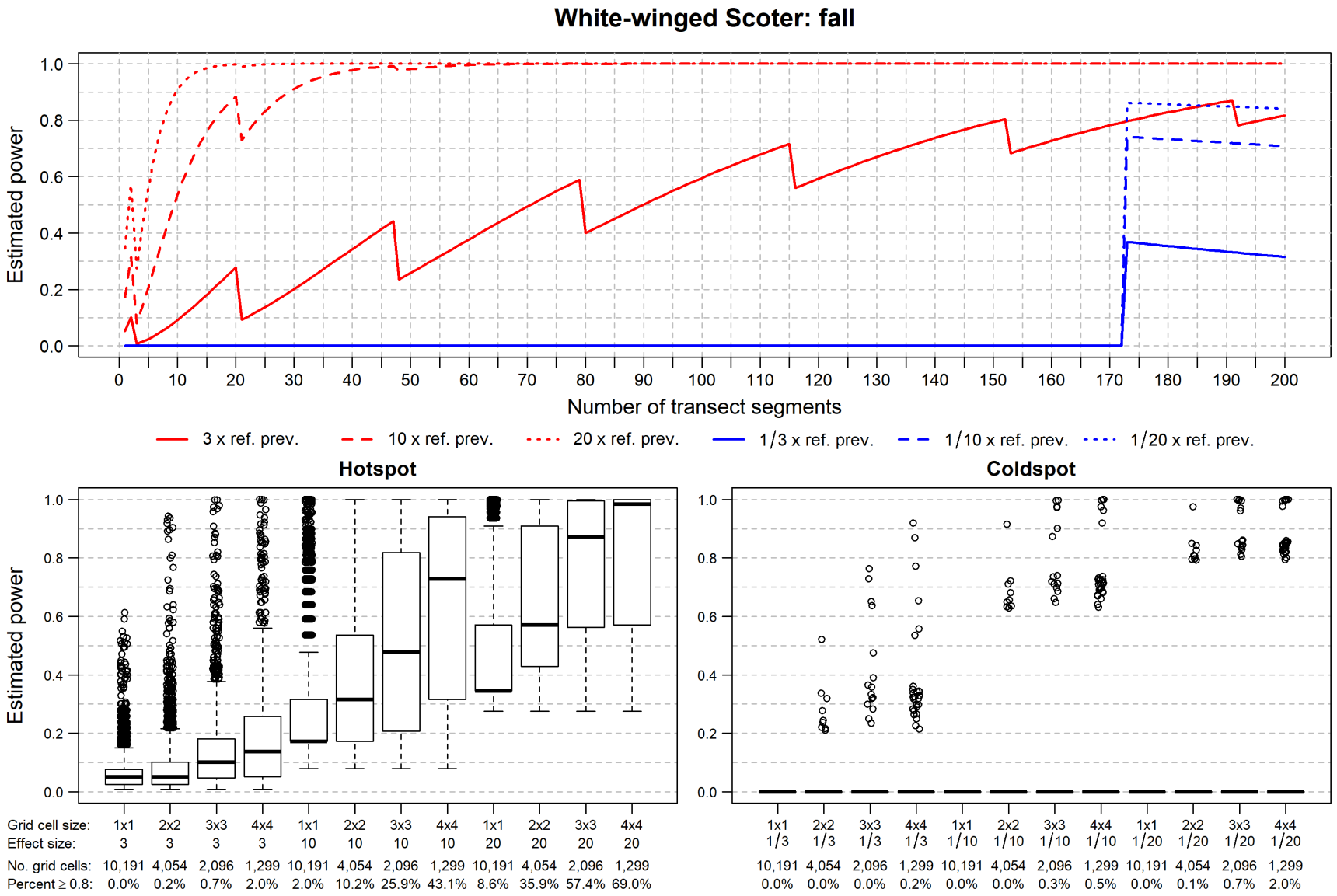


Figure C9. Power analysis results for White-winged Scoter during fall based on the occurrence probability model (type I error rate = 0.05)

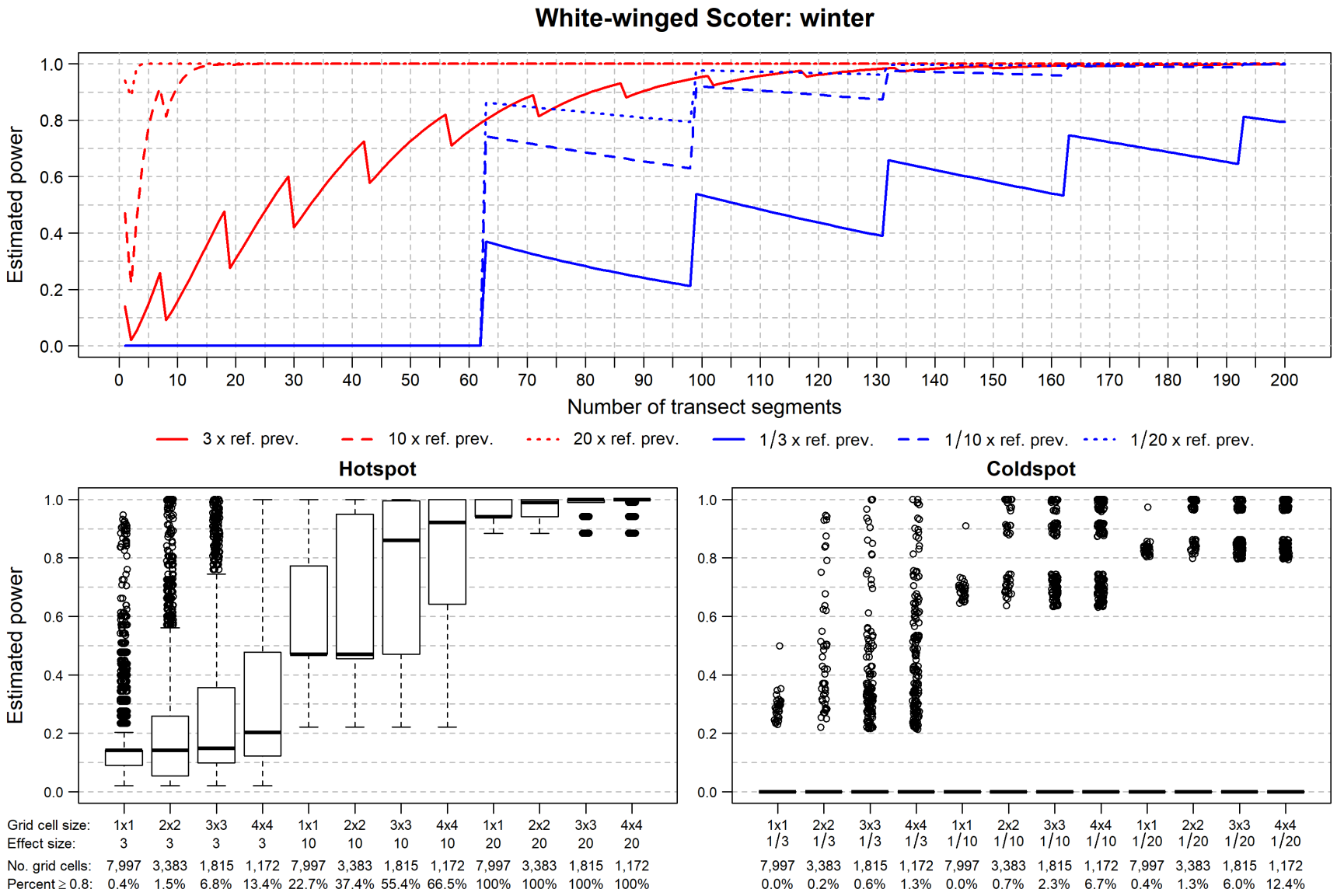


Figure C10. Power analysis results for White-winged Scoter during winter based on the occurrence probability model (type I error rate = 0.05)

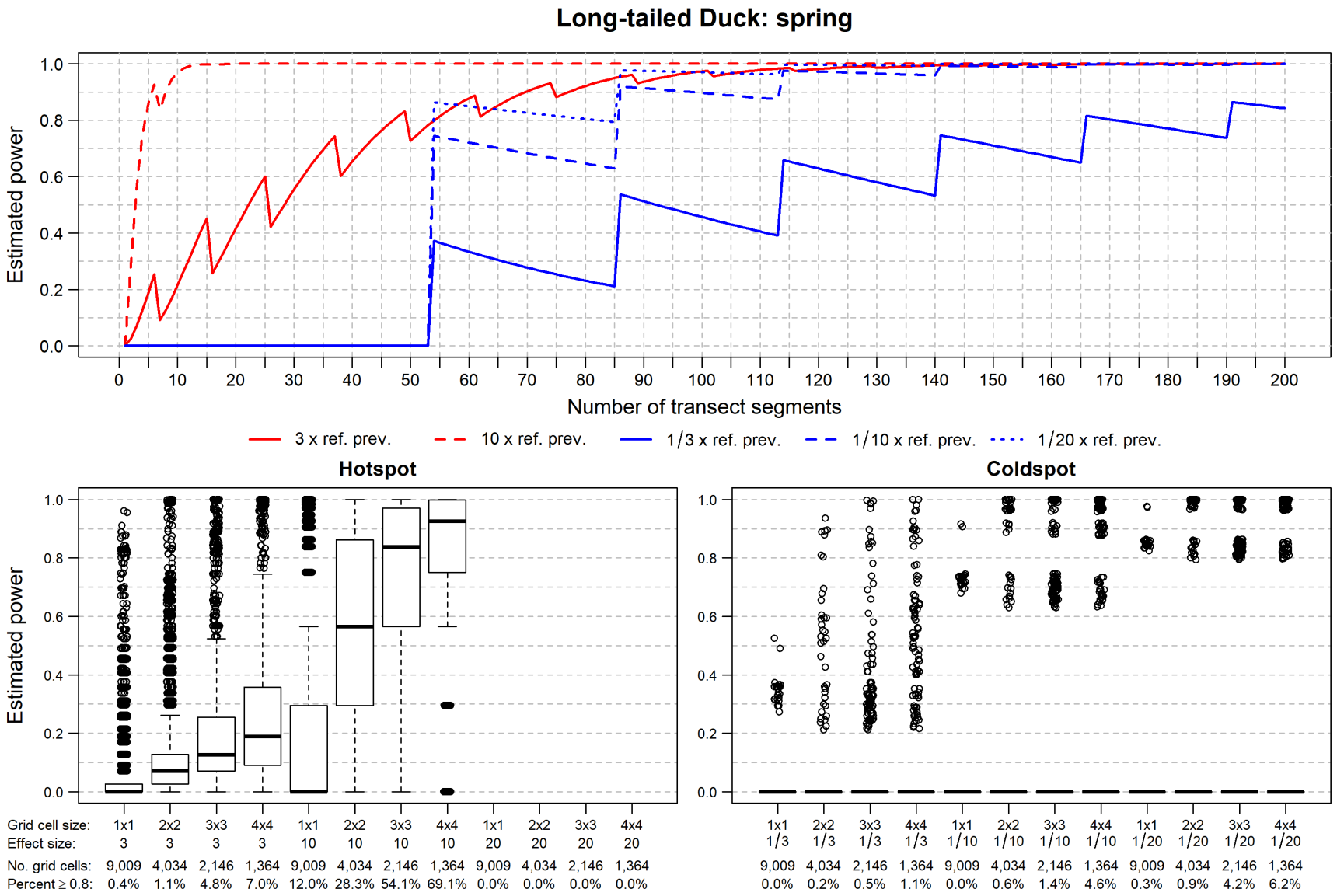
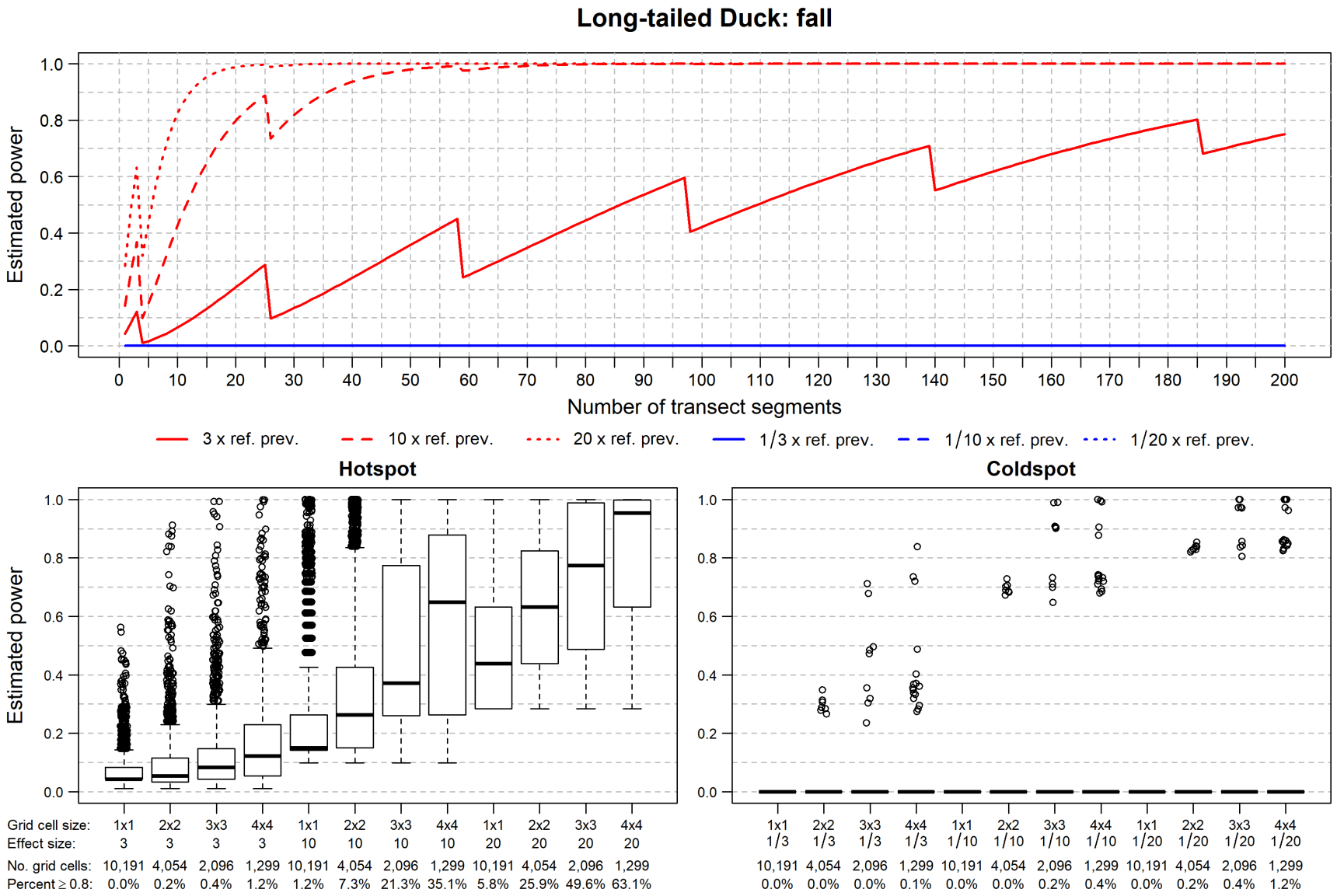


Figure C11. Power analysis results for Long-tailed Duck during spring based on the occurrence probability model (type I error rate = 0.05)



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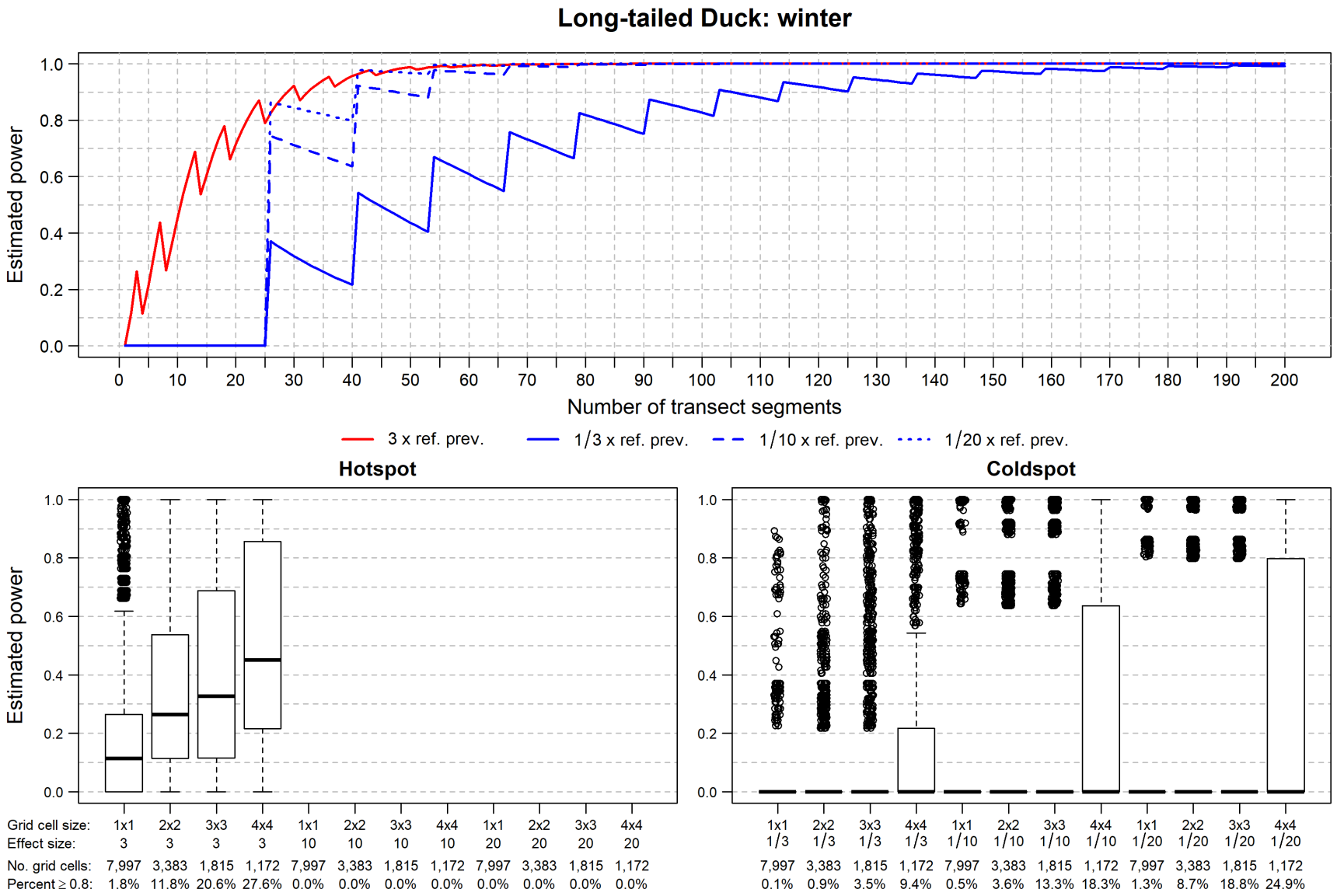

Figure C13. Power analysis results for Long-tailed Duck during winter based on the occurrence probability model (type I error rate = 0.05)

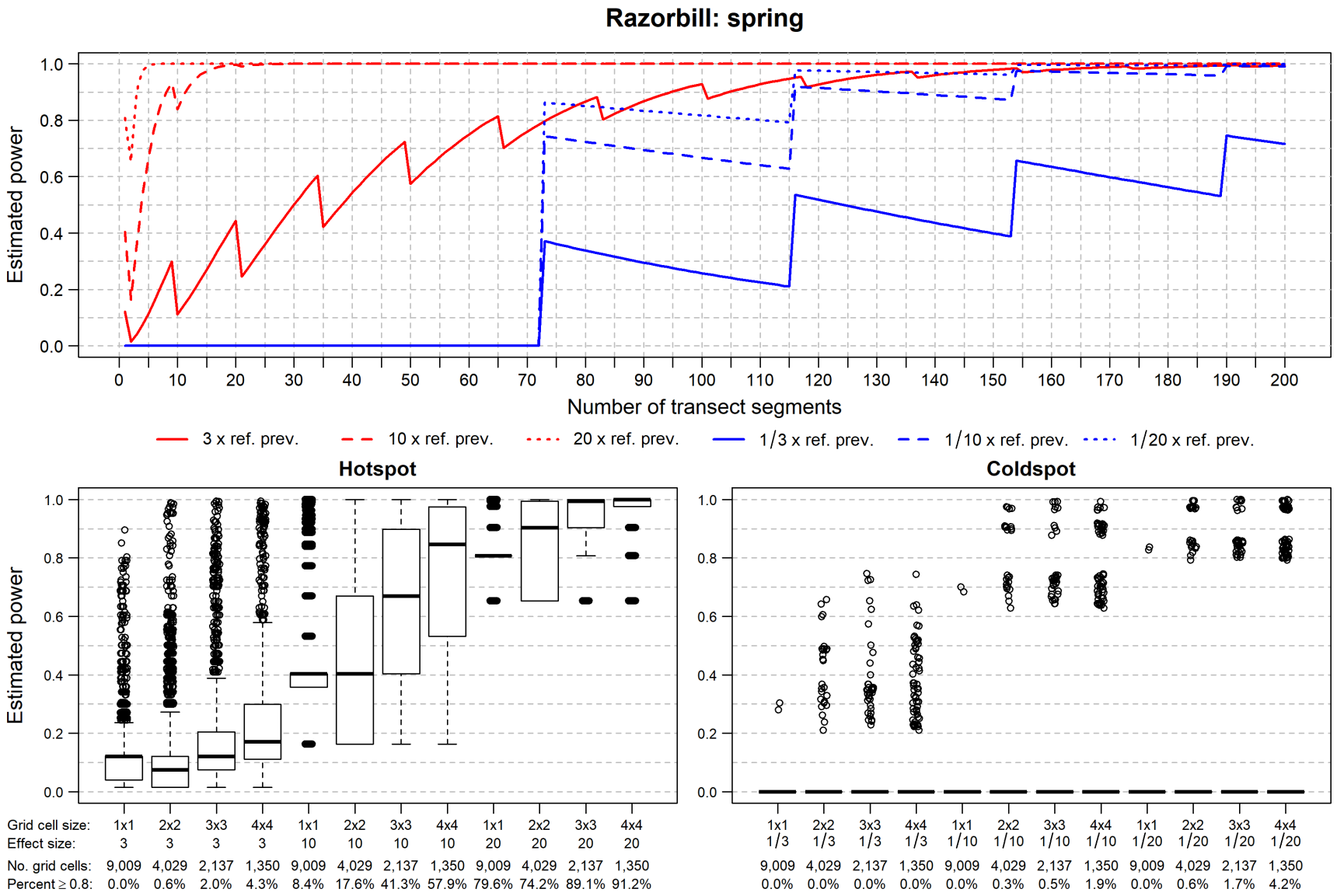

Figure C14. Power analysis results for Razorbill during spring based on the occurrence probability model (type I error rate = 0.05)

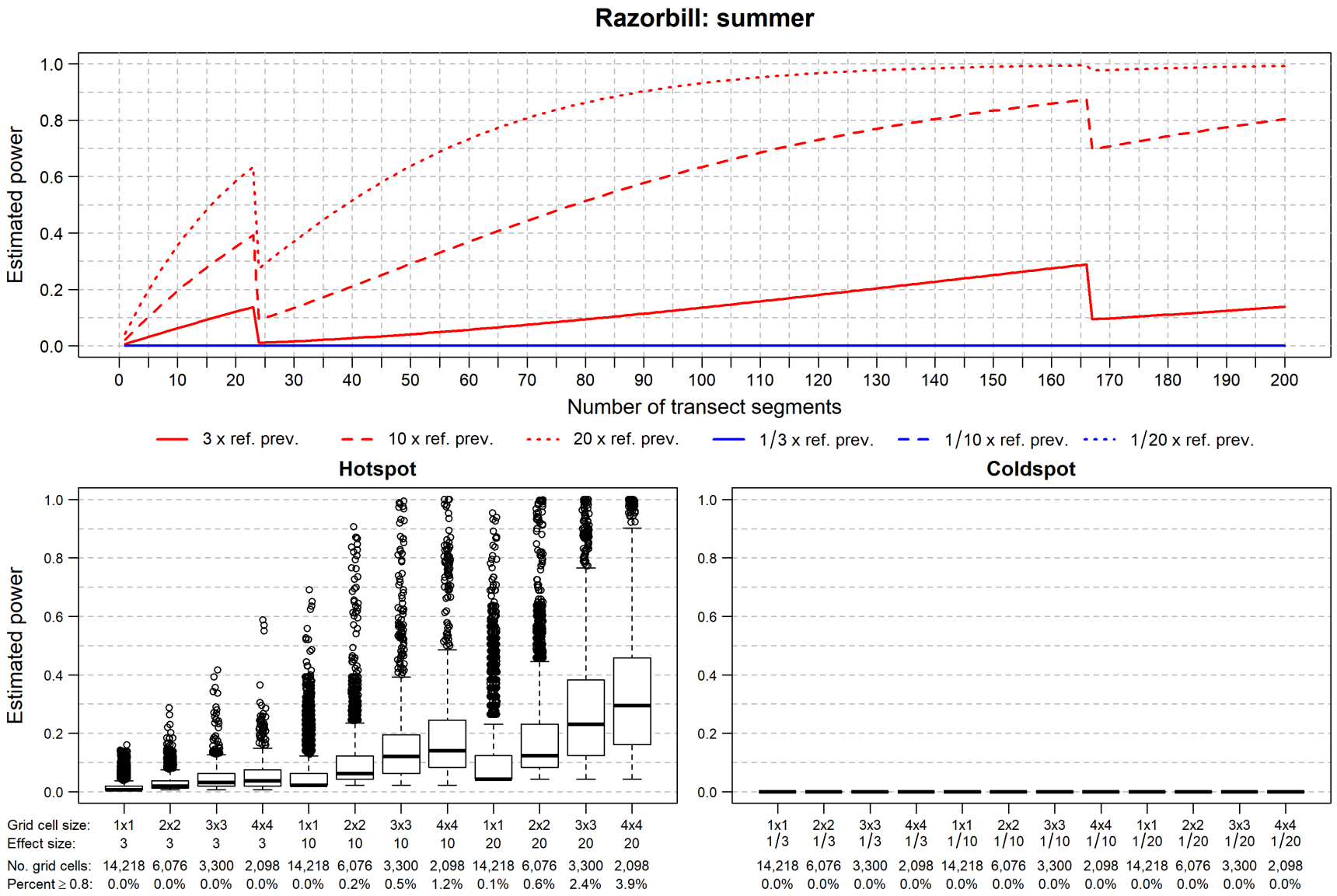

Figure C15. Power analysis results for Razorbill during summer based on the occurrence probability model (type I error rate = 0.05)

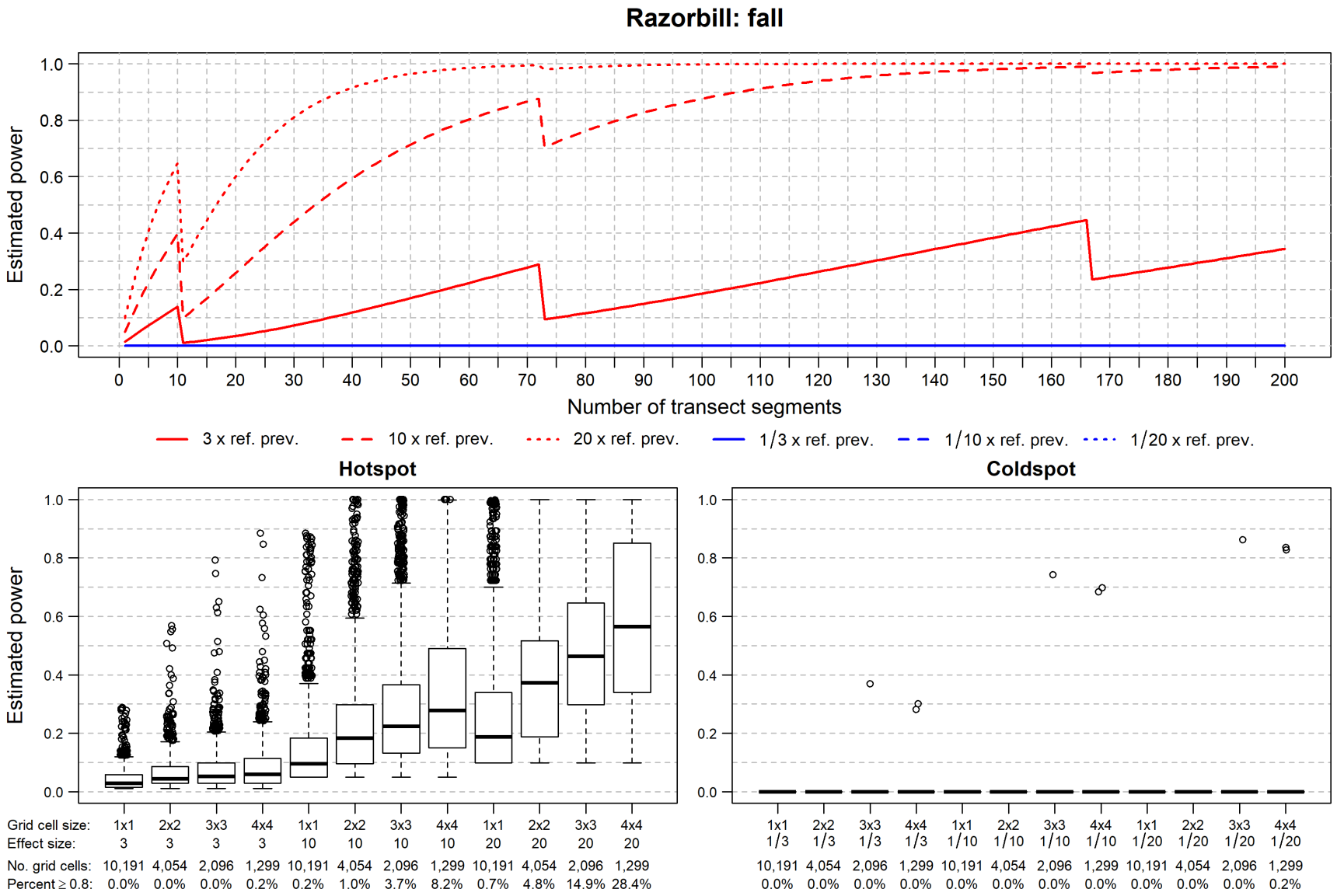

Figure C16. Power analysis results for Razorbill during fall based on the occurrence probability model (type I error rate = 0.05)

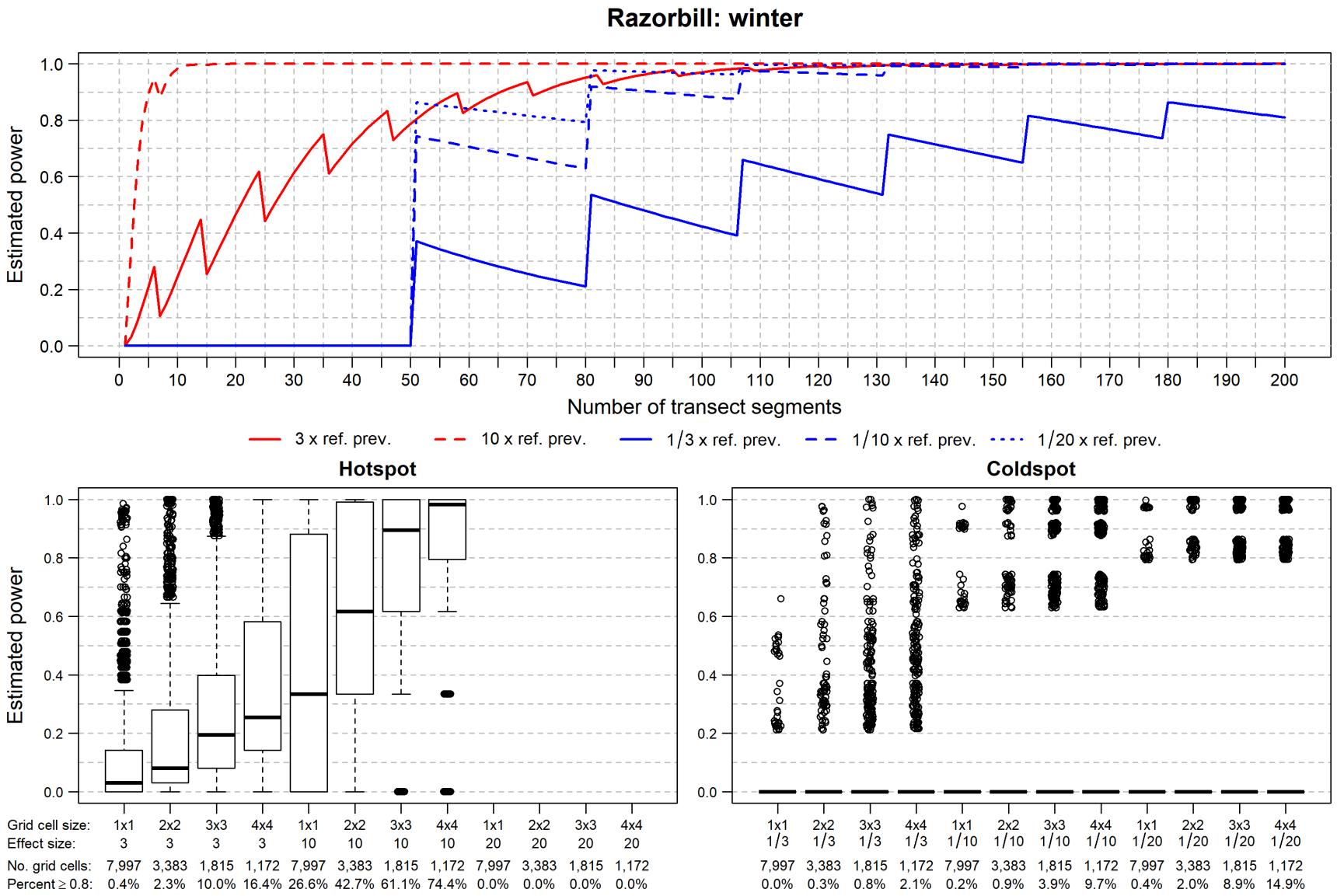

Figure C17. Power analysis results for Razorbill during winter based on the occurrence probability model (type I error rate = 0.05)

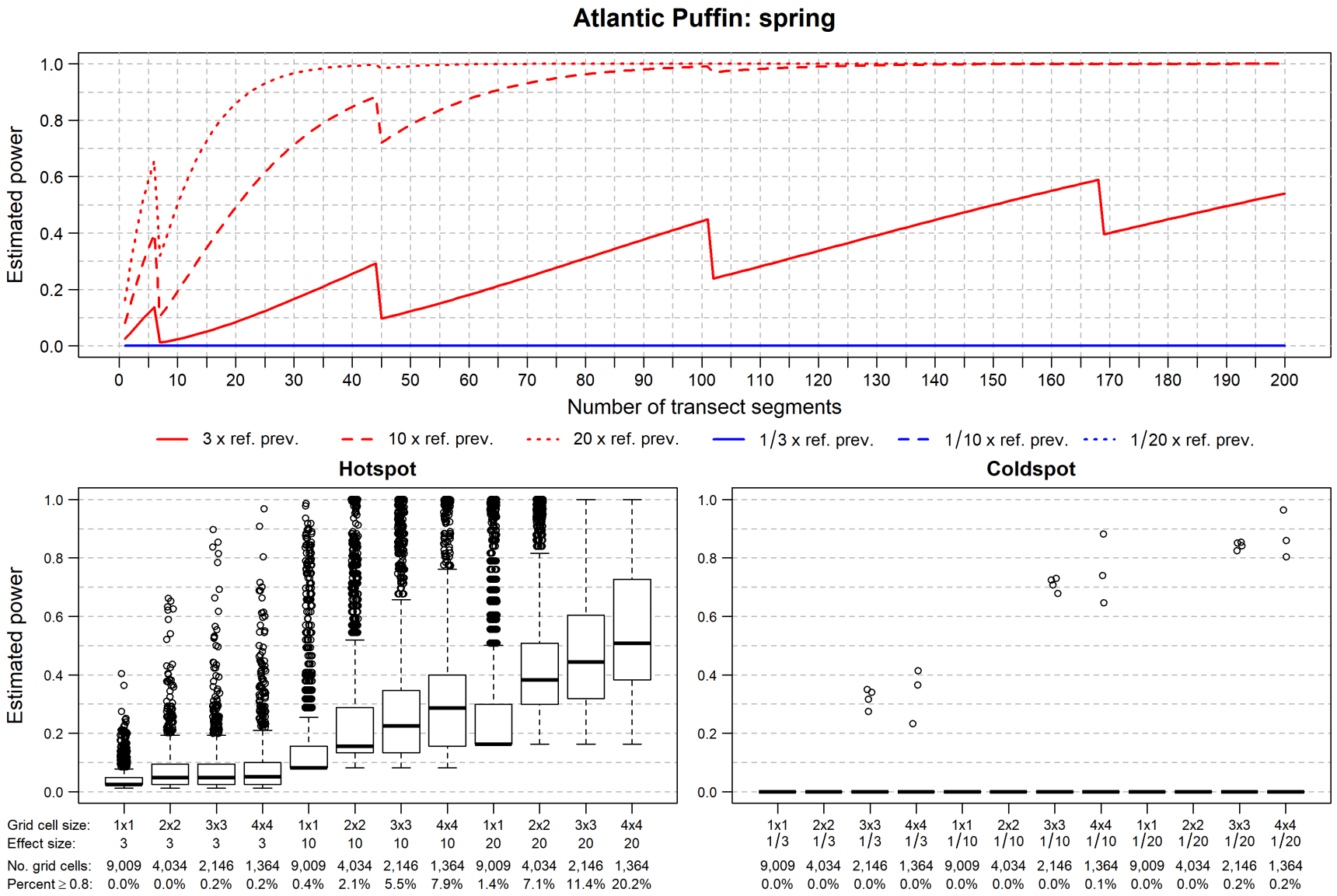

Figure C18. Power analysis results for Atlantic Puffin during spring based on the occurrence probability model (type I error rate = 0.05)

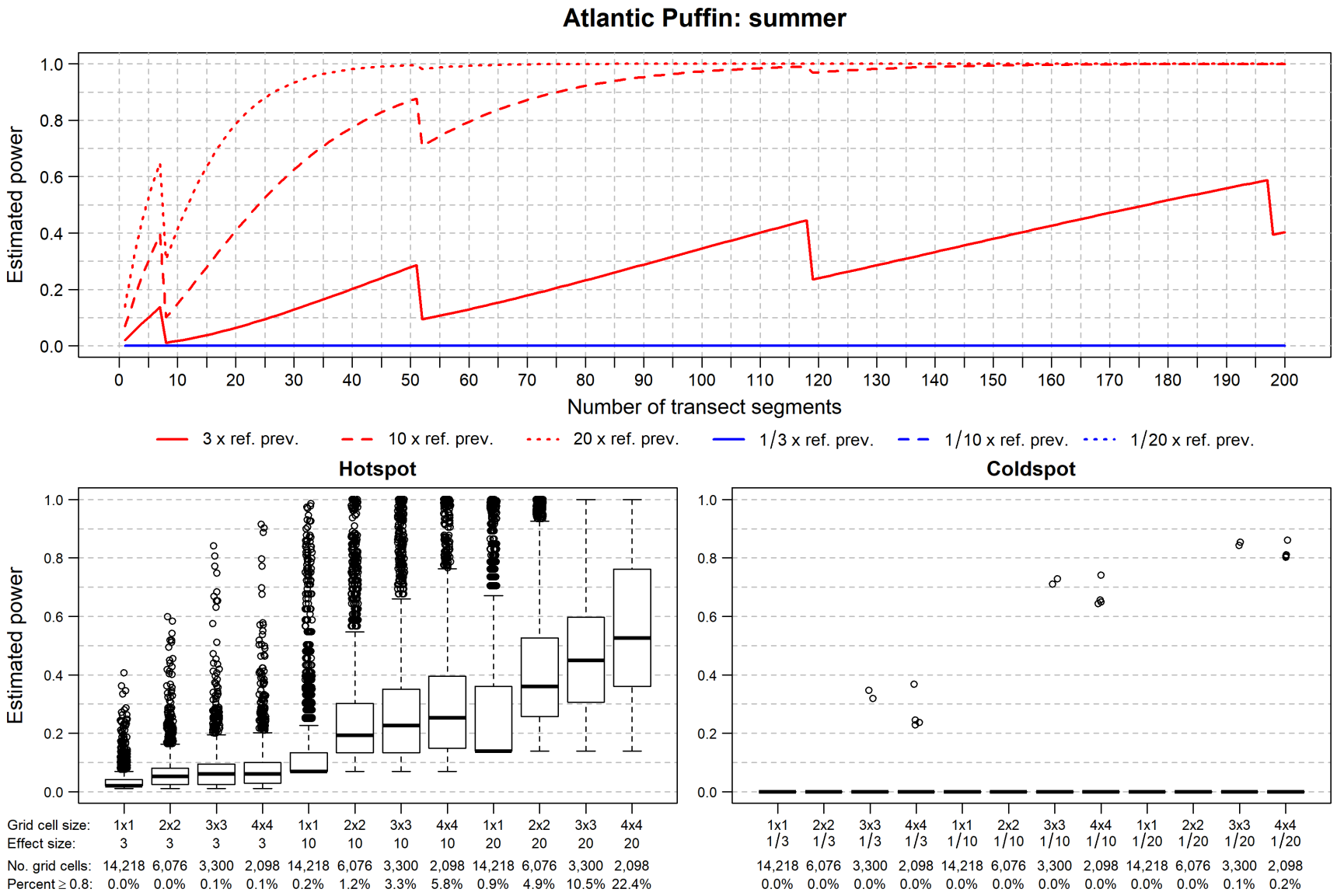

Figure C19. Power analysis results for Atlantic Puffin during summer based on the occurrence probability model (type I error rate = 0.05)

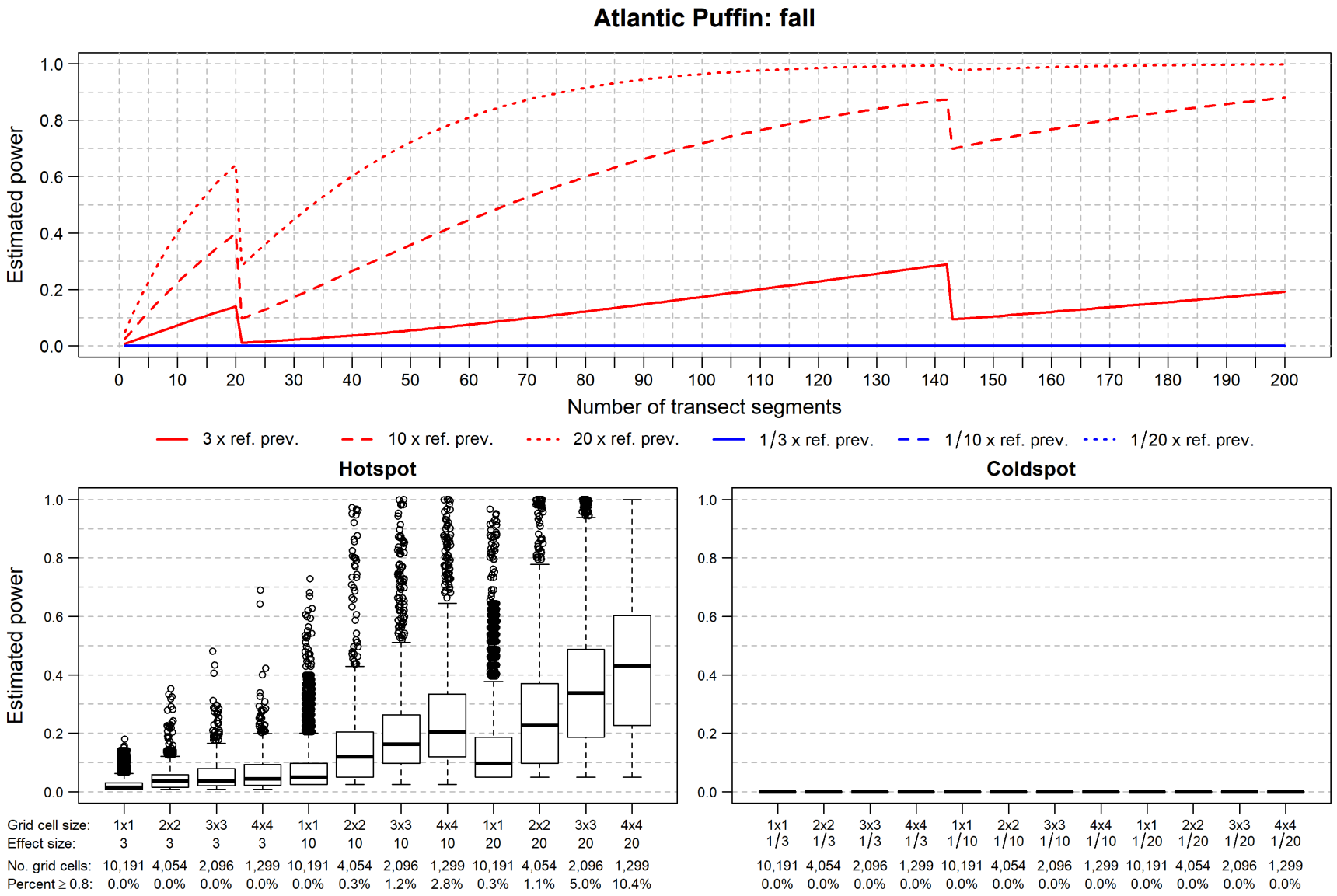

Figure C20. Power analysis results for Atlantic Puffin during fall based on the occurrence probability model (type I error rate = 0.05)

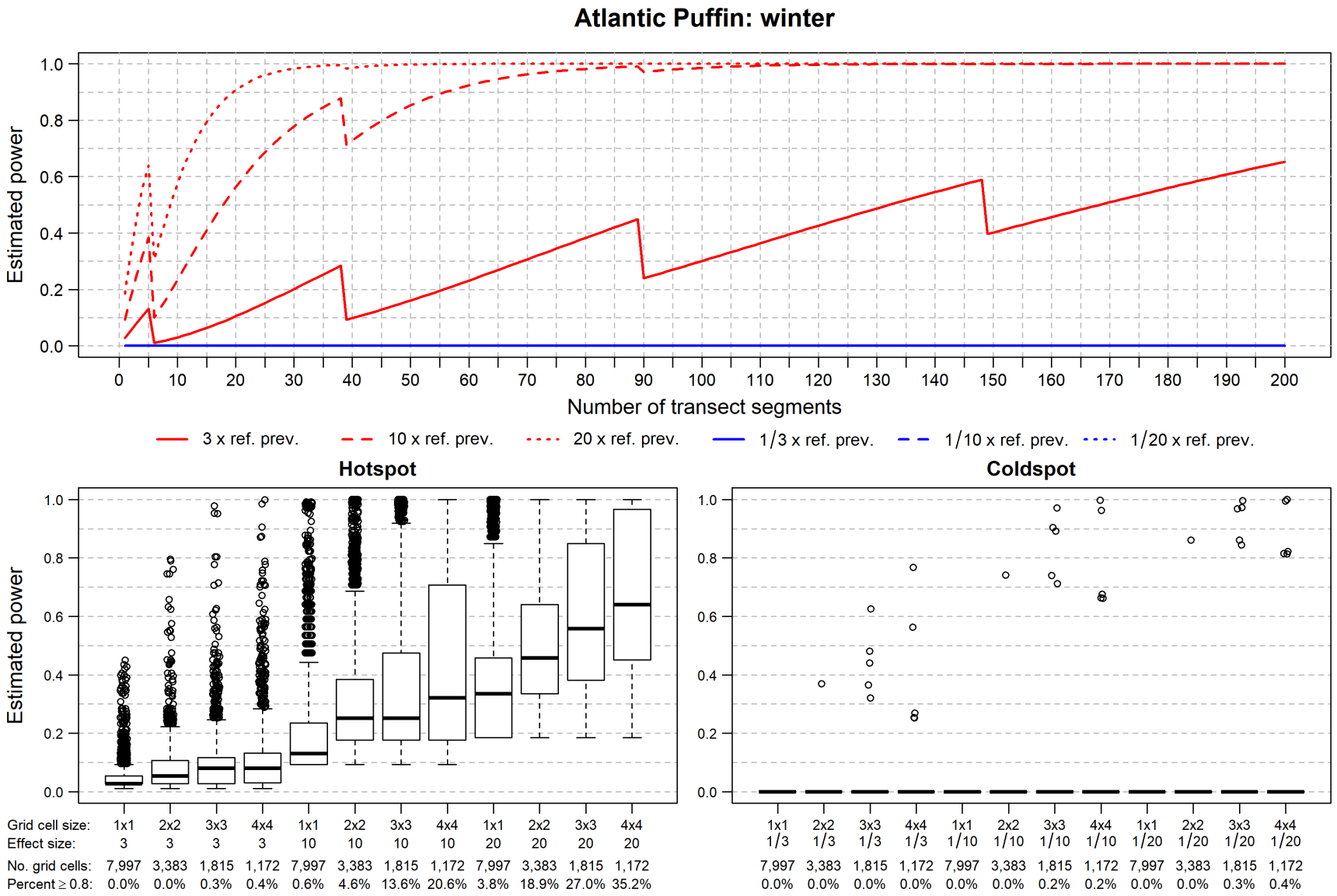

Figure C21. Power analysis results for Atlantic Puffin during winter based on the occurrence probability model (type I error rate = 0.05)

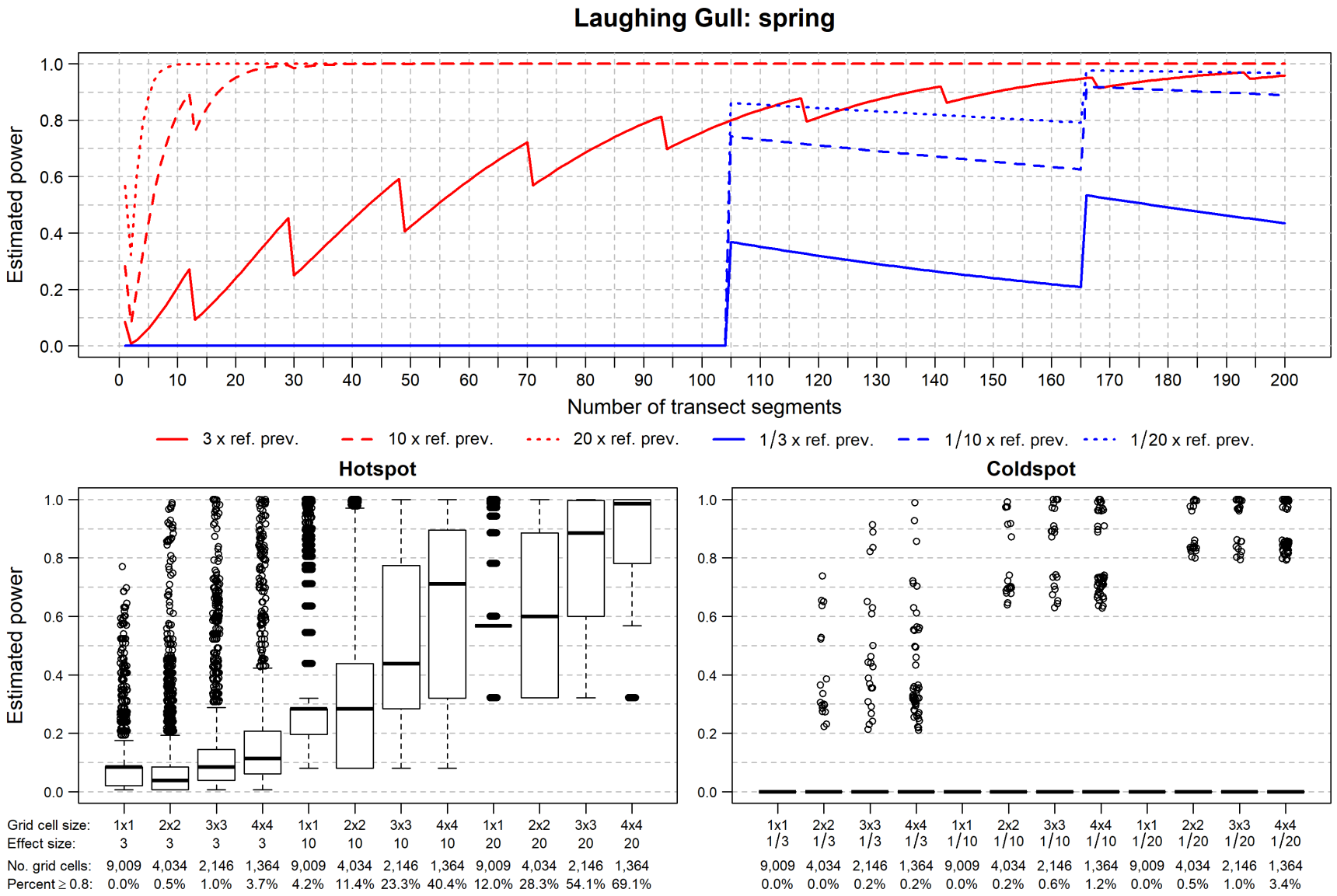

Figure C22. Power analysis results for Laughing Gull during spring based on the occurrence probability model (type I error rate = 0.05)

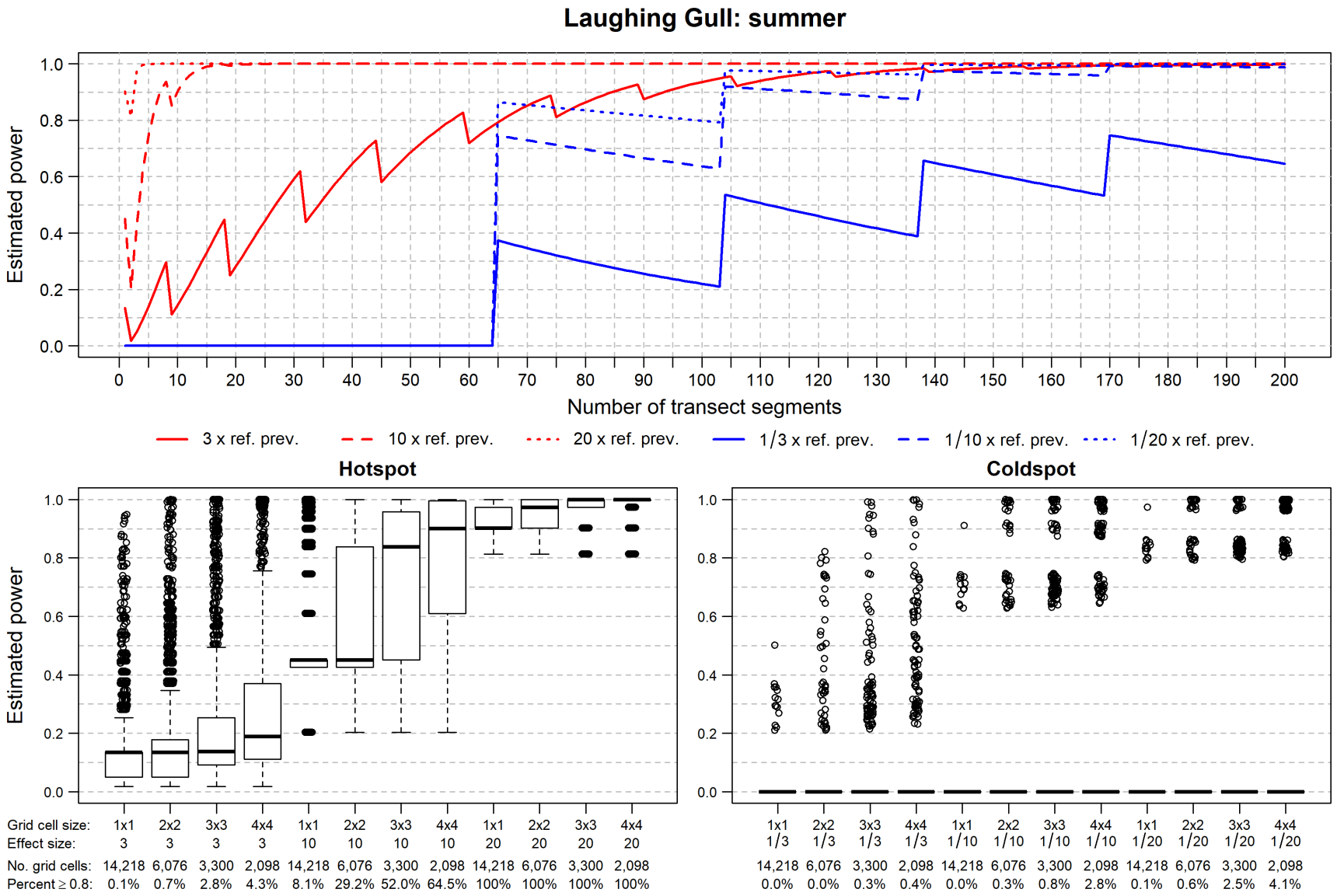

Figure C23. Power analysis results for Laughing Gull during summer based on the occurrence probability model (type I error rate = 0.05)

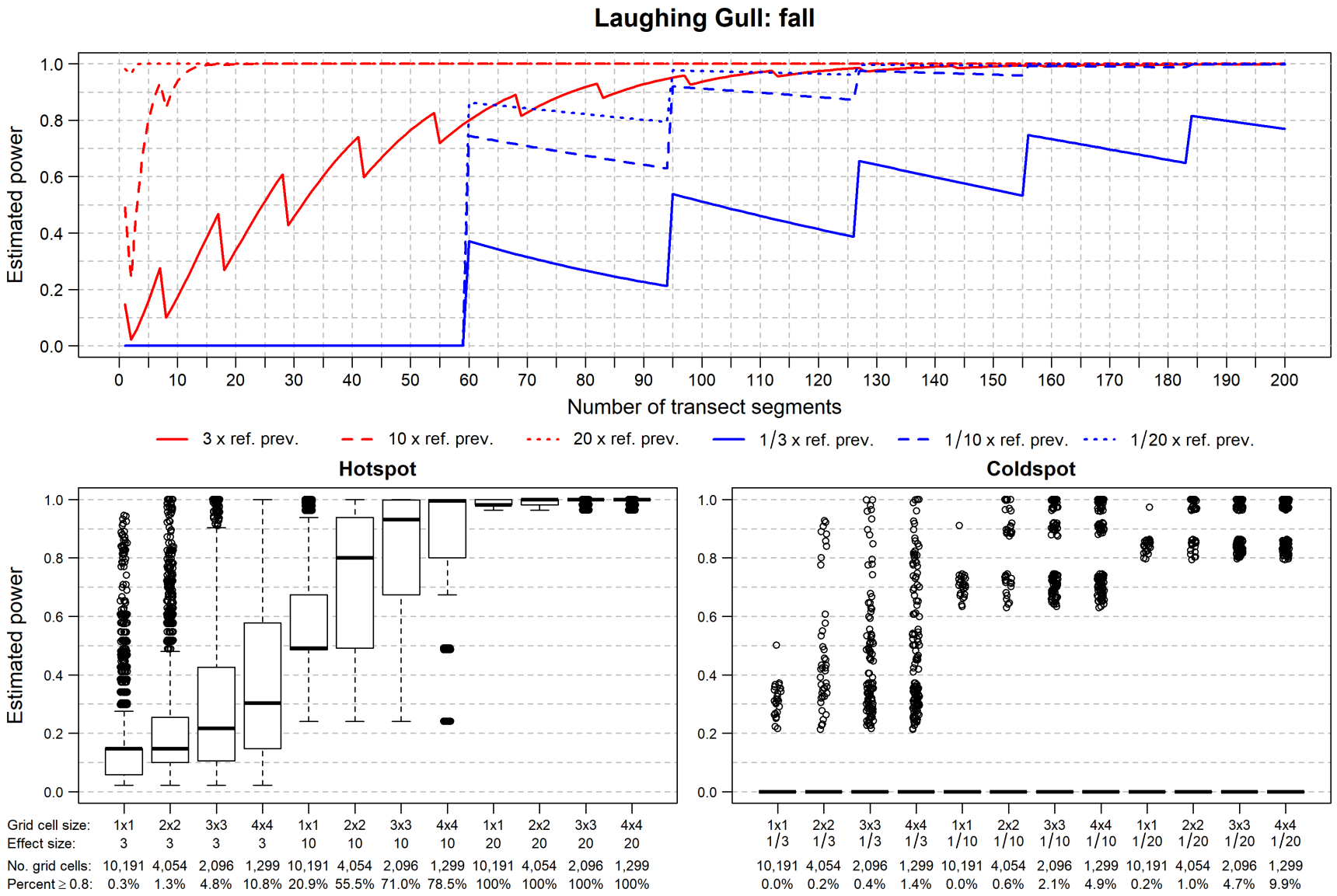

Figure C24. Power analysis results for Laughing Gull during fall based on the occurrence probability model (type I error rate = 0.05)

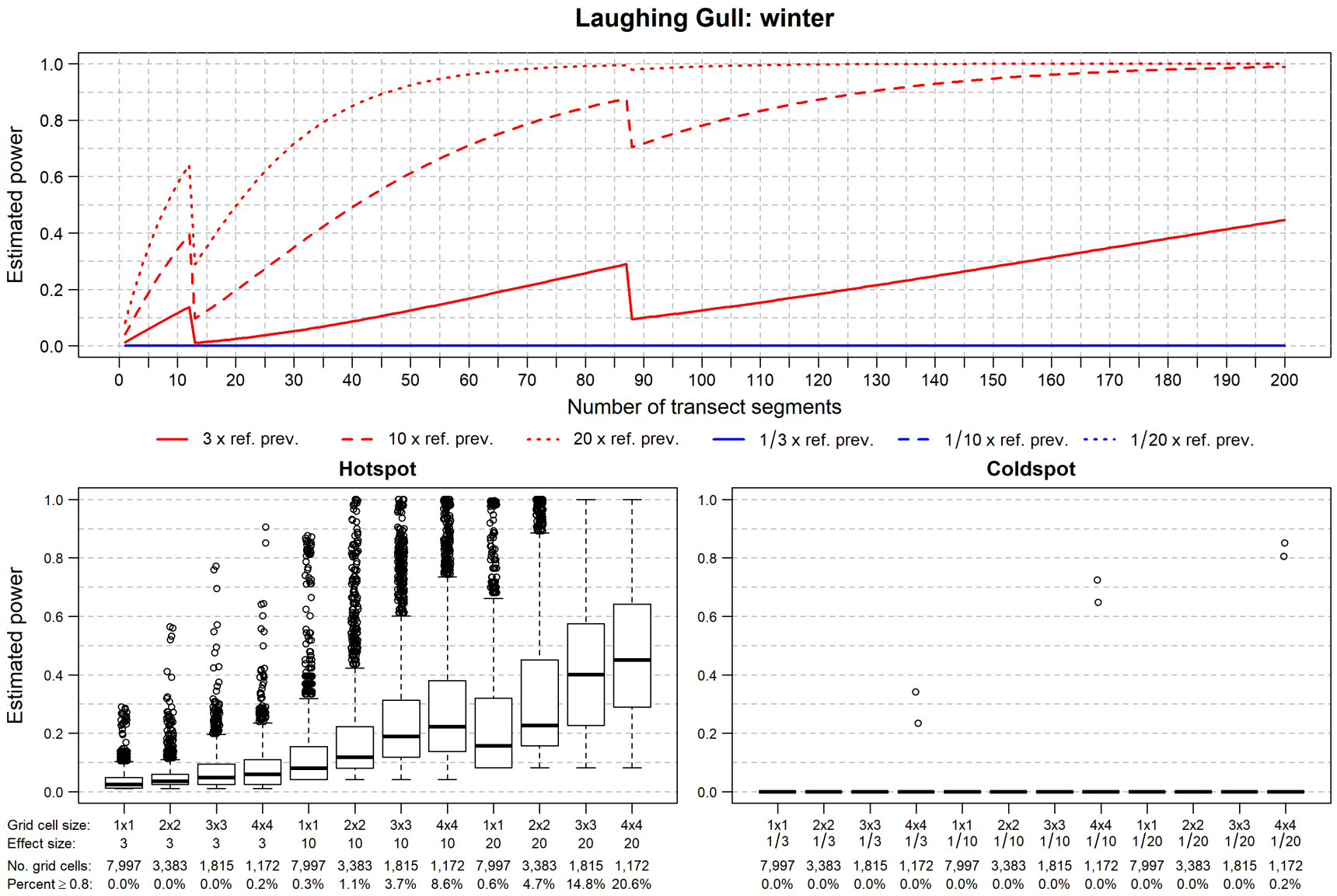

Figure C25. Power analysis results for Laughing Gull during winter based on the occurrence probability model (type I error rate = 0.05)

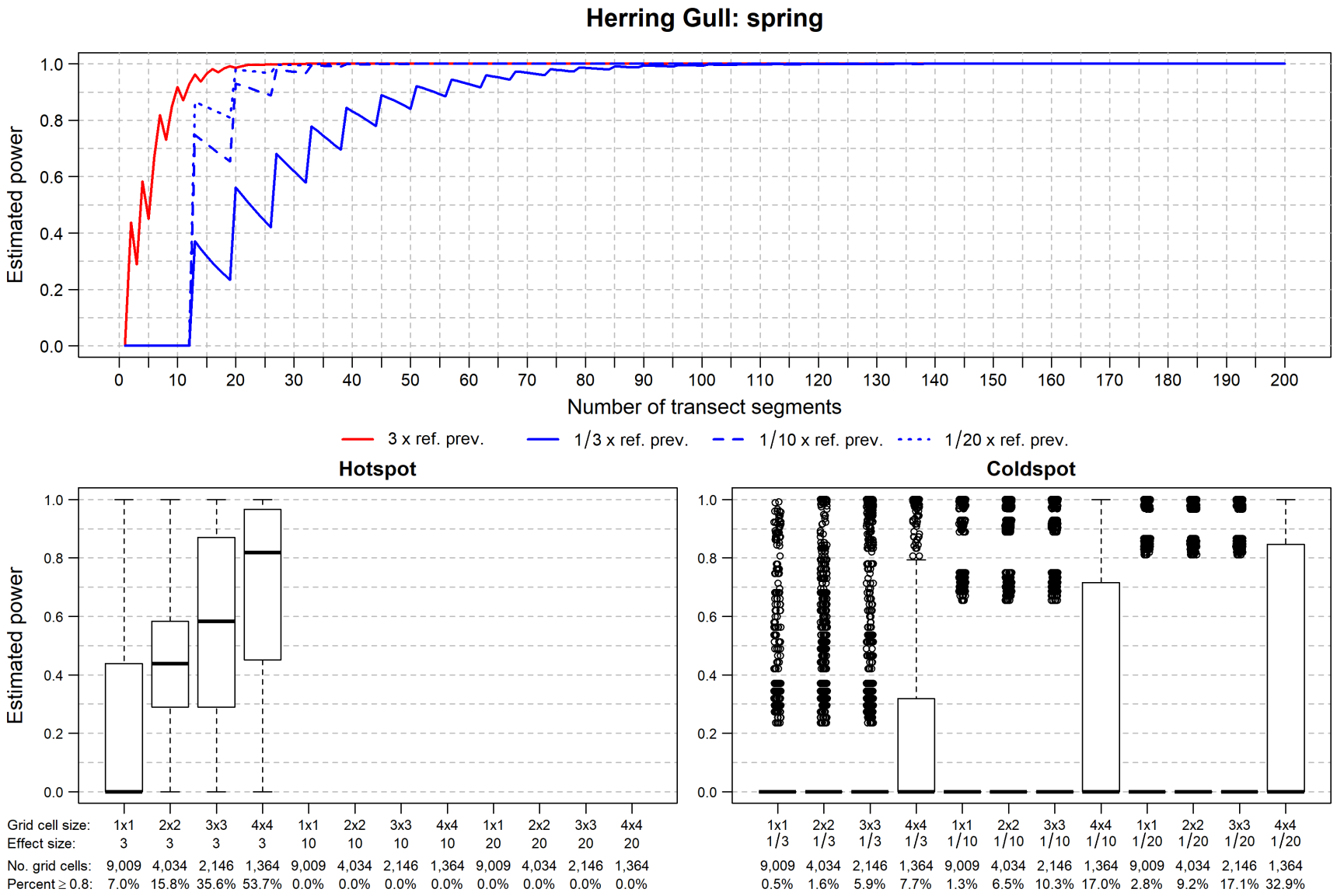

Figure C26. Power analysis results for Herring Gull during spring based on the occurrence probability model (type I error rate = 0.05)

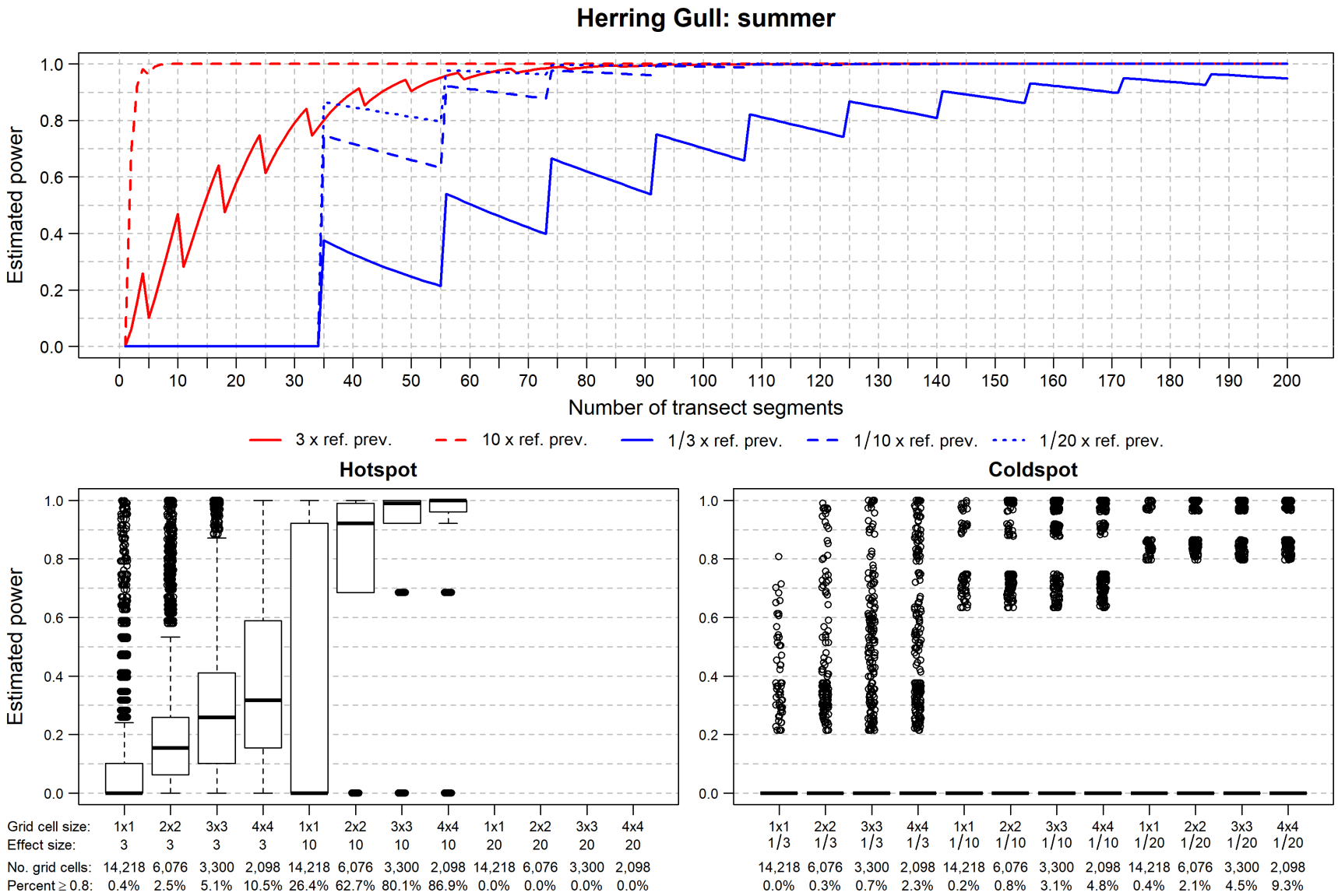

Figure C27. Power analysis results for Herring Gull during summer based on the occurrence probability model (type I error rate = 0.05)

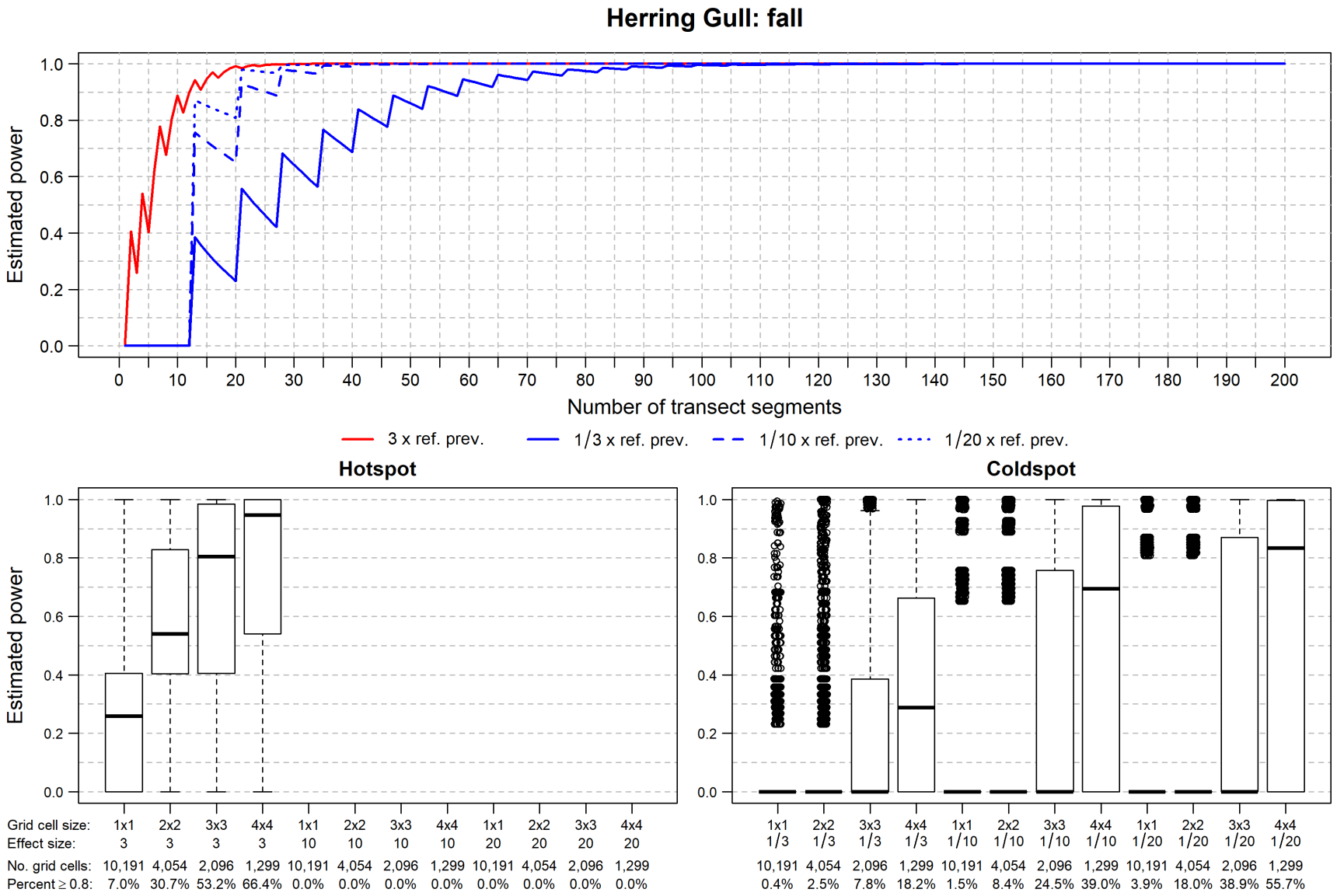

Figure C28. Power analysis results for Herring Gull during fall based on the occurrence probability model (type I error rate = 0.05)

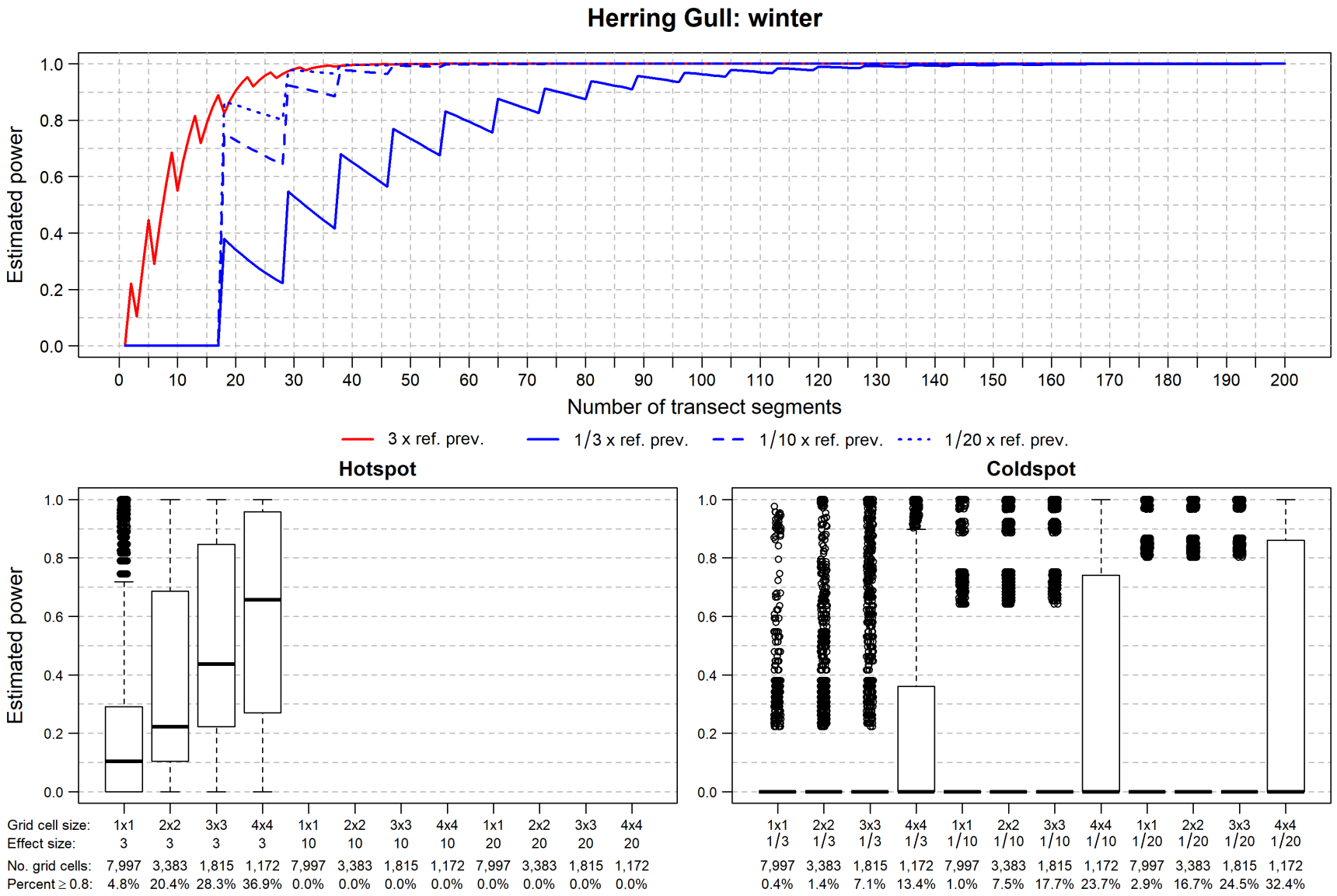

Figure C29. Power analysis results for Herring Gull during winter based on the occurrence probability model (type I error rate = 0.05)

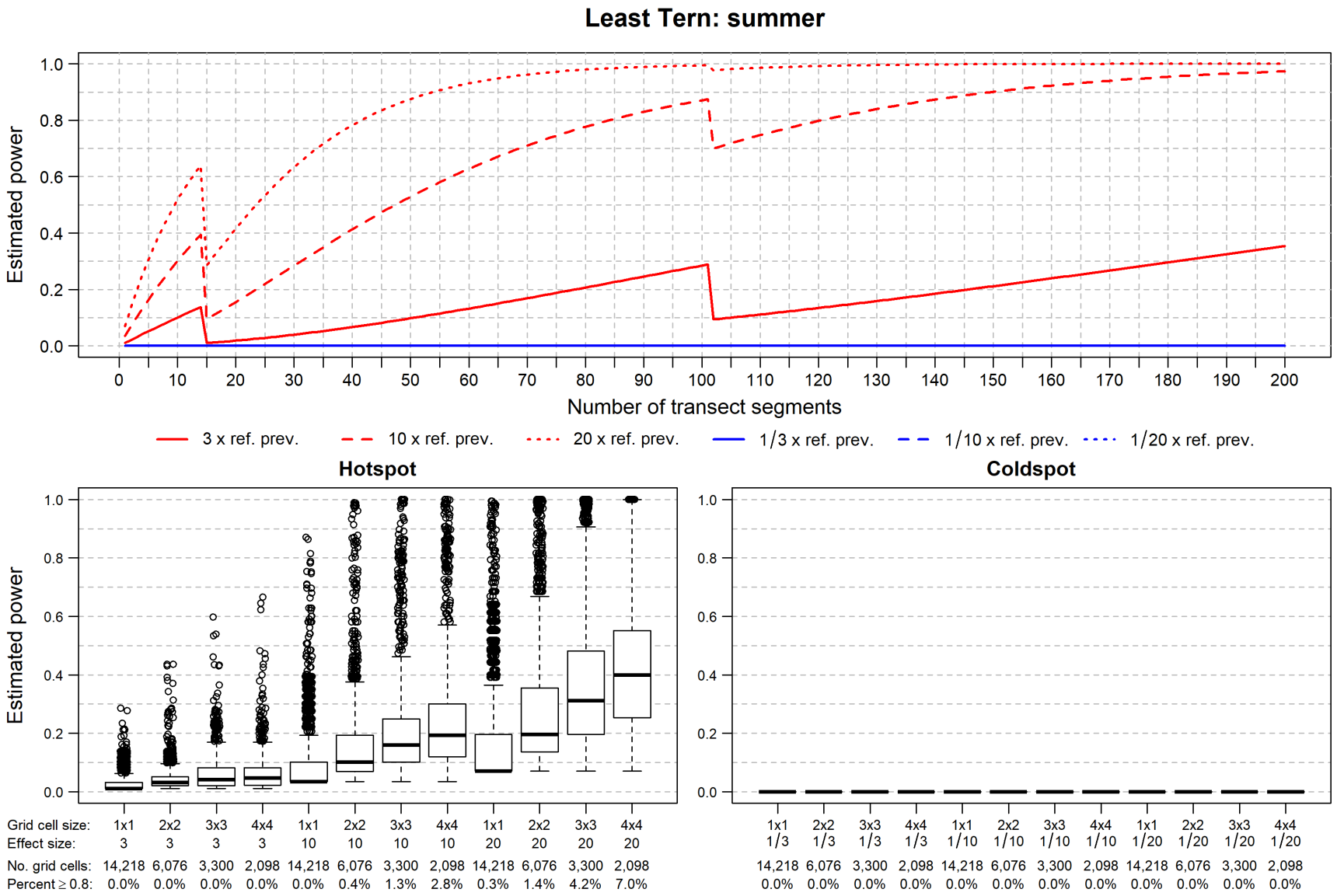

Figure C30. Power analysis results for Least Tern during summer based on the occurrence probability model (type I error rate = 0.05)

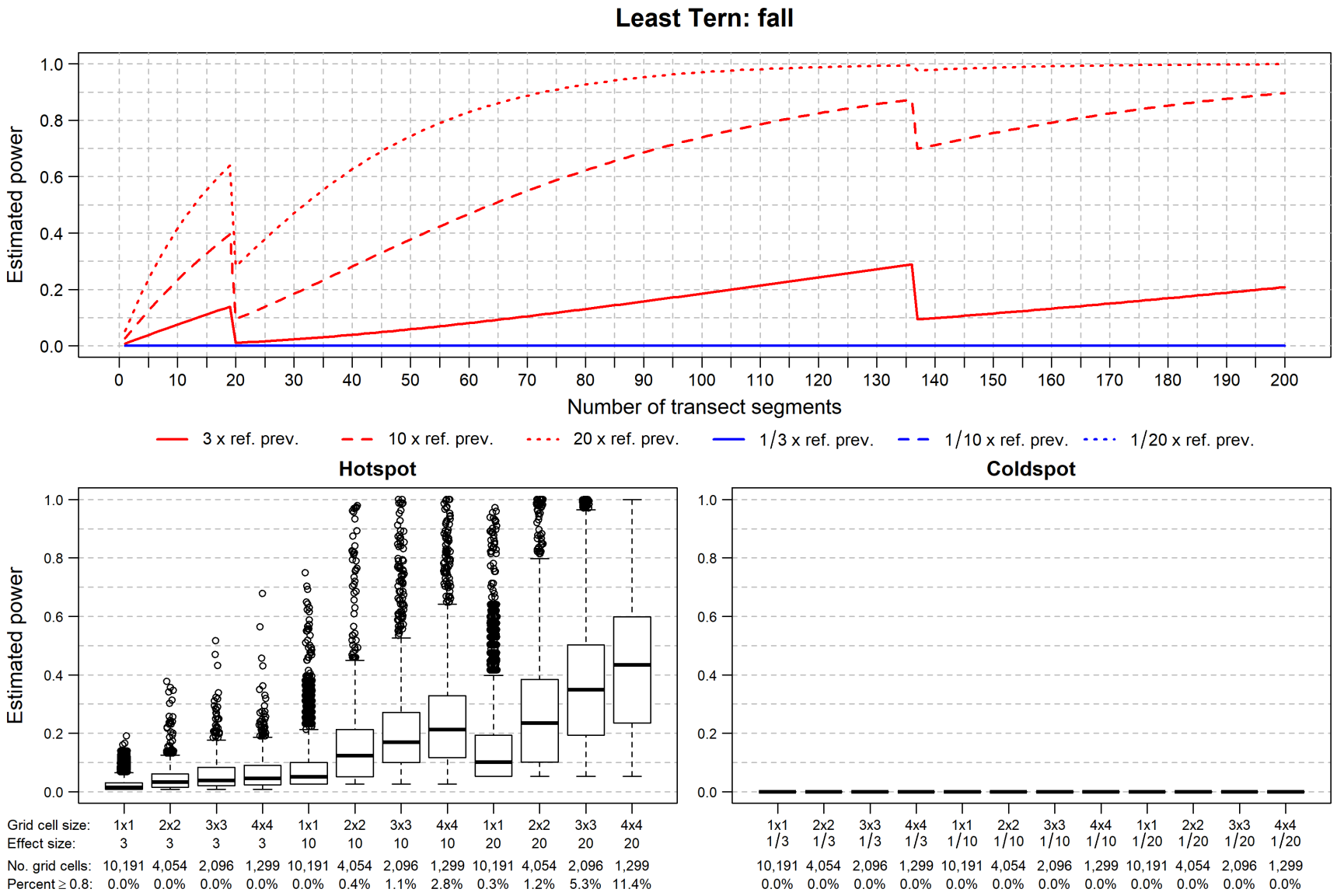

Figure C31. Power analysis results for Least Tern during fall based on the occurrence probability model (type I error rate = 0.05)

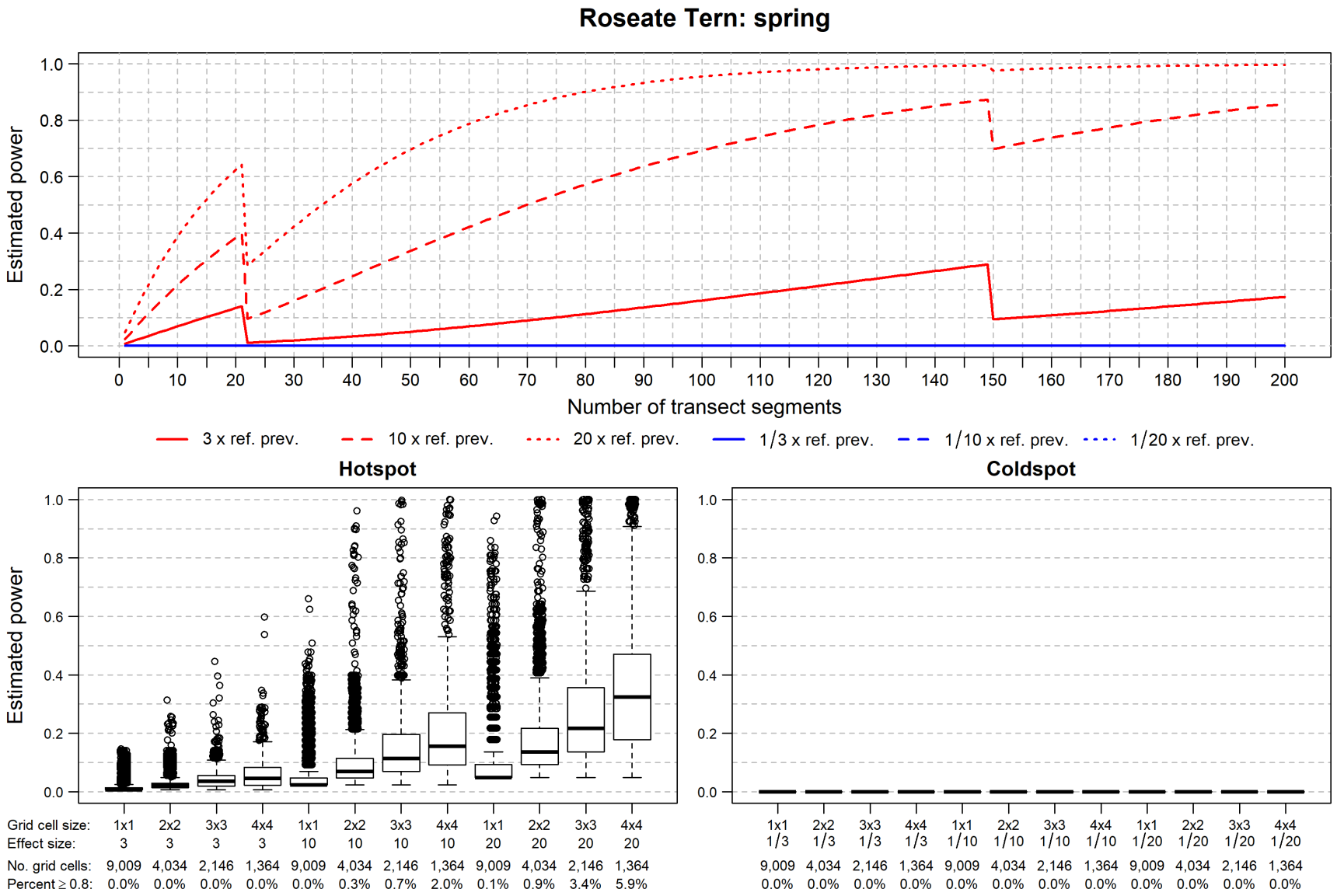

Figure C32. Power analysis results for Roseate Tern during spring based on the occurrence probability model (type I error rate = 0.05)

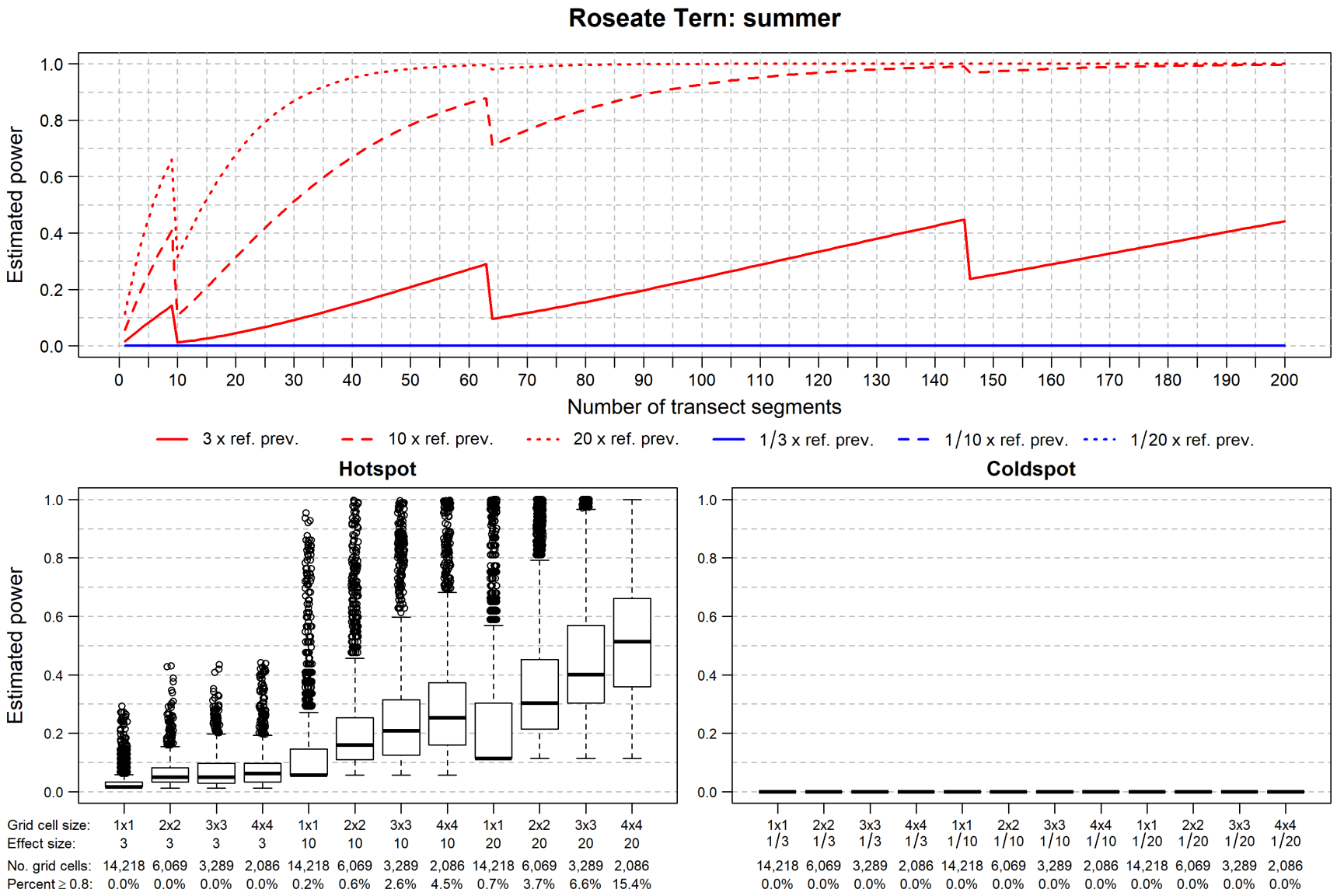

Figure C33. Power analysis results for Roseate Tern during summer based on the occurrence probability model (type I error rate = 0.05)

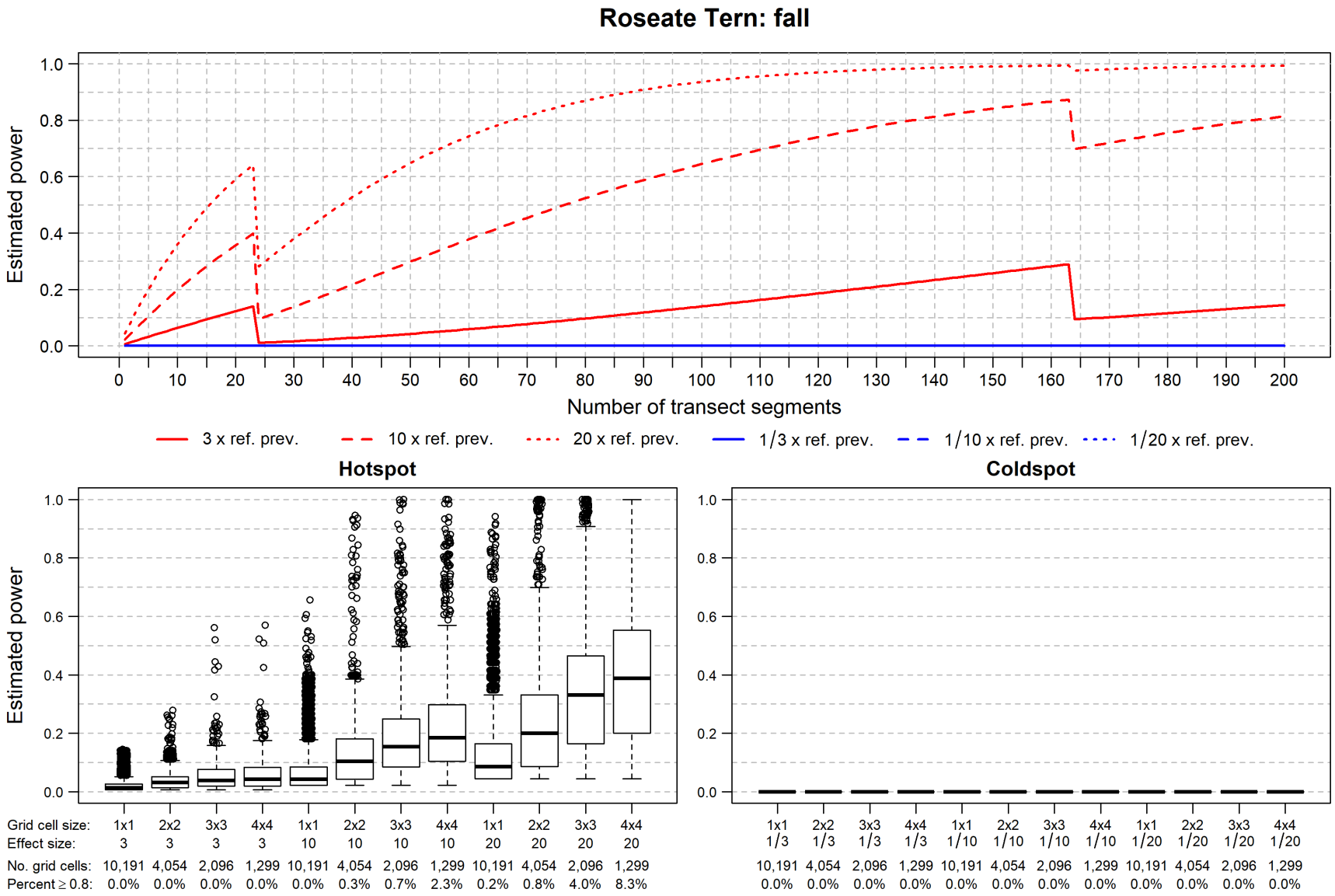

Figure C34. Power analysis results for Roseate Tern during fall based on the occurrence probability model (type I error rate = 0.05)

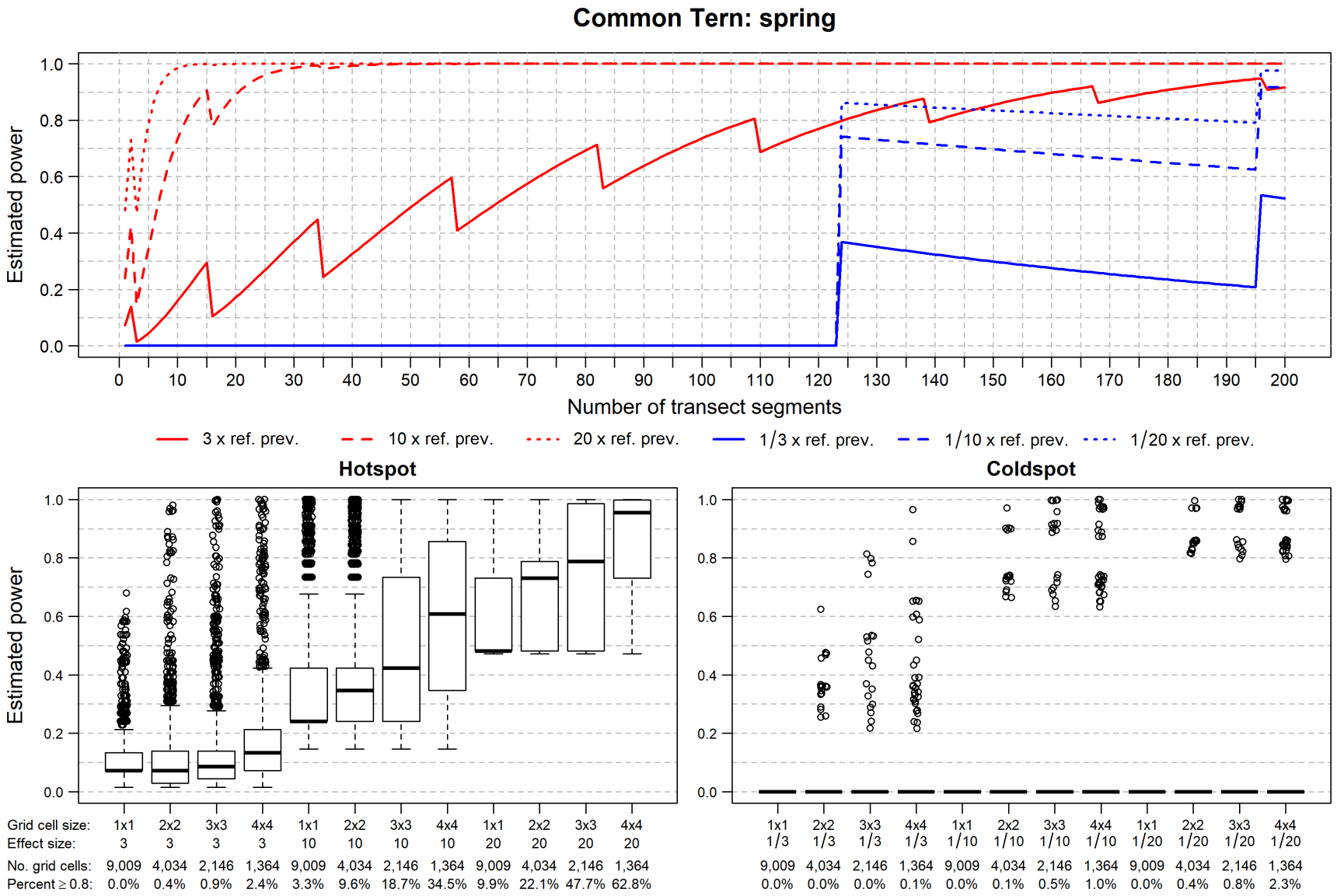

Figure C35. Power analysis results for Common Tern during spring based on the occurrence probability model (type I error rate = 0.05)

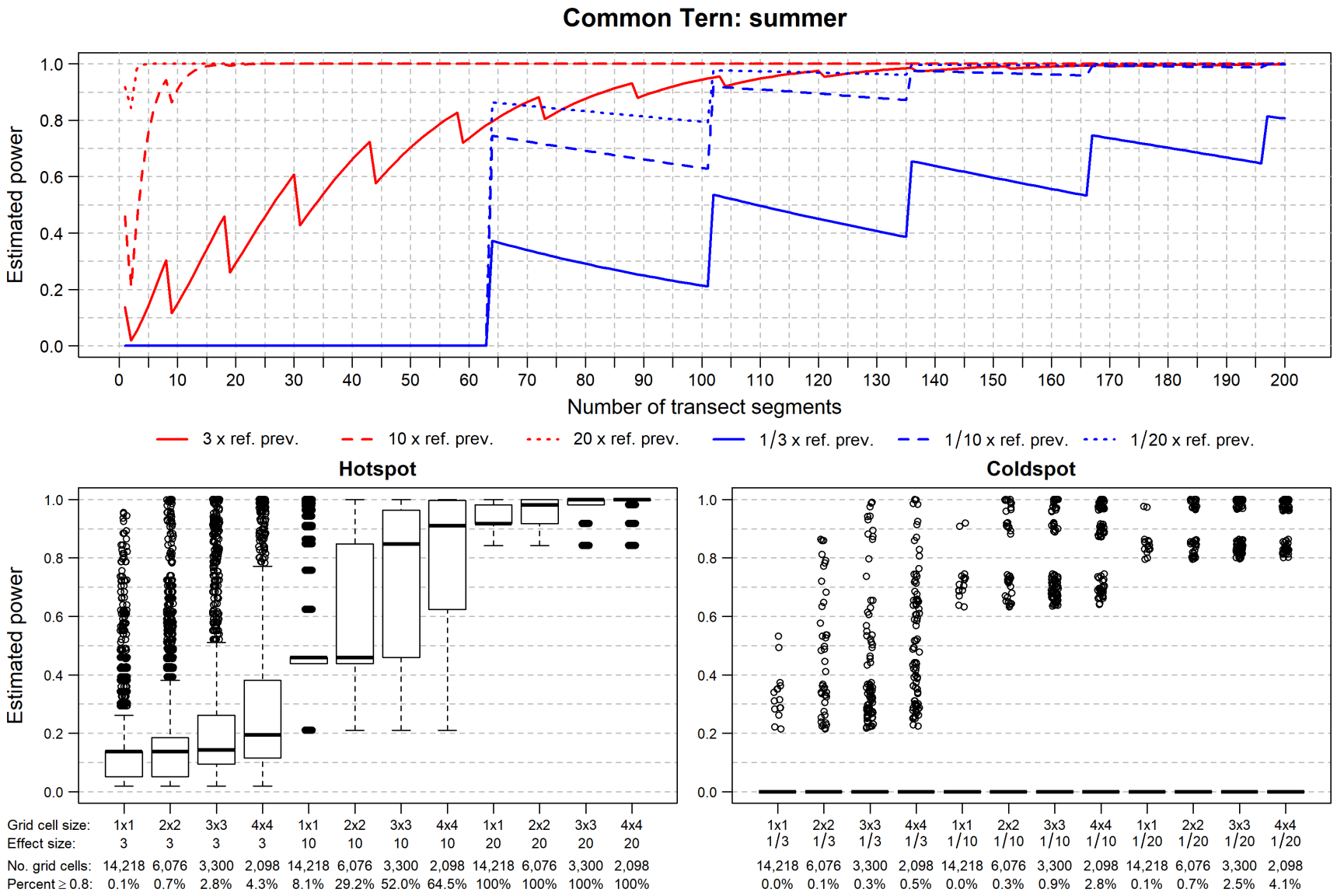

Figure C36. Power analysis results for Common Tern during summer based on the occurrence probability model (type I error rate = 0.05)

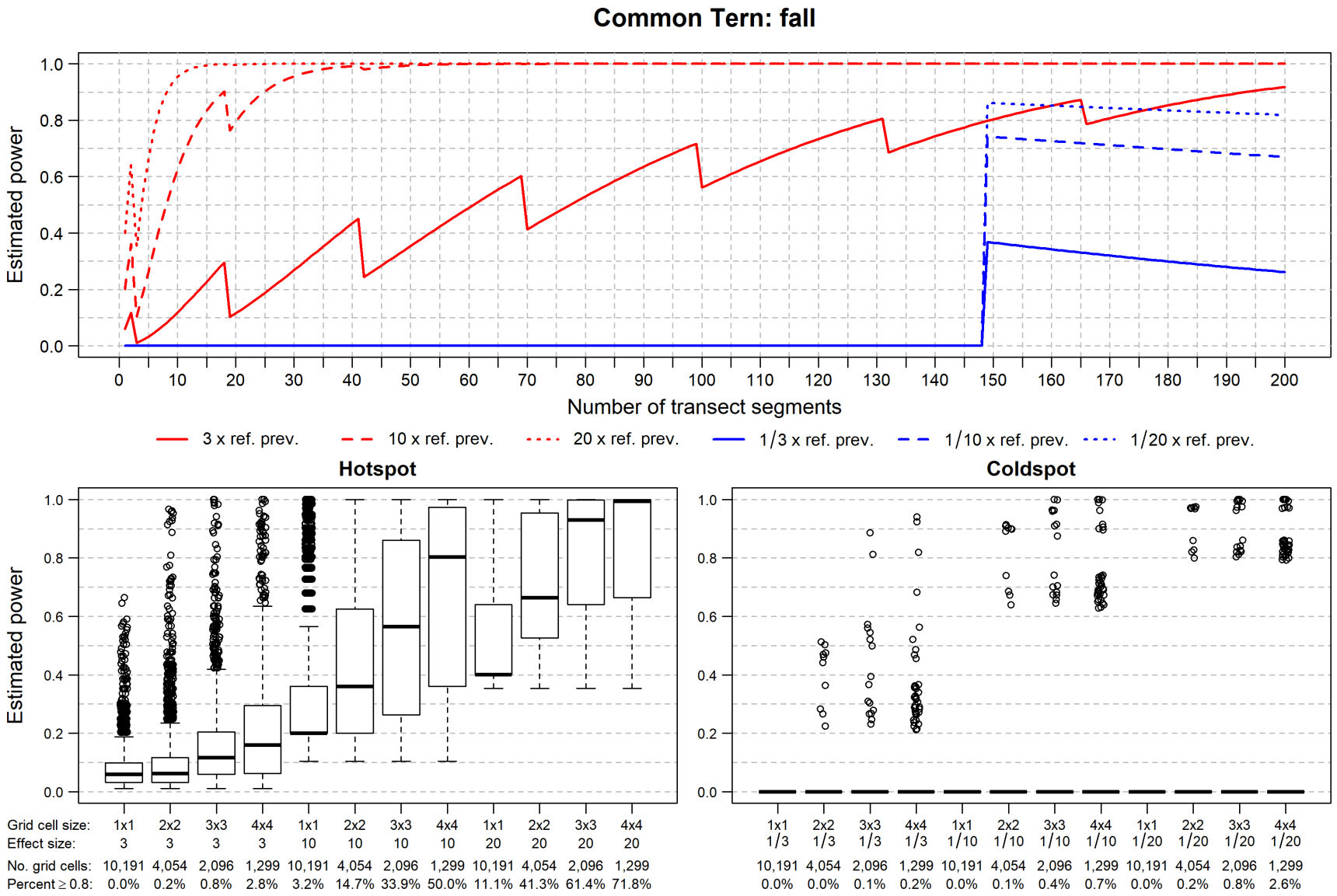

Figure C37. Power analysis results for Common Tern during fall based on the occurrence probability model (type I error rate = 0.05)

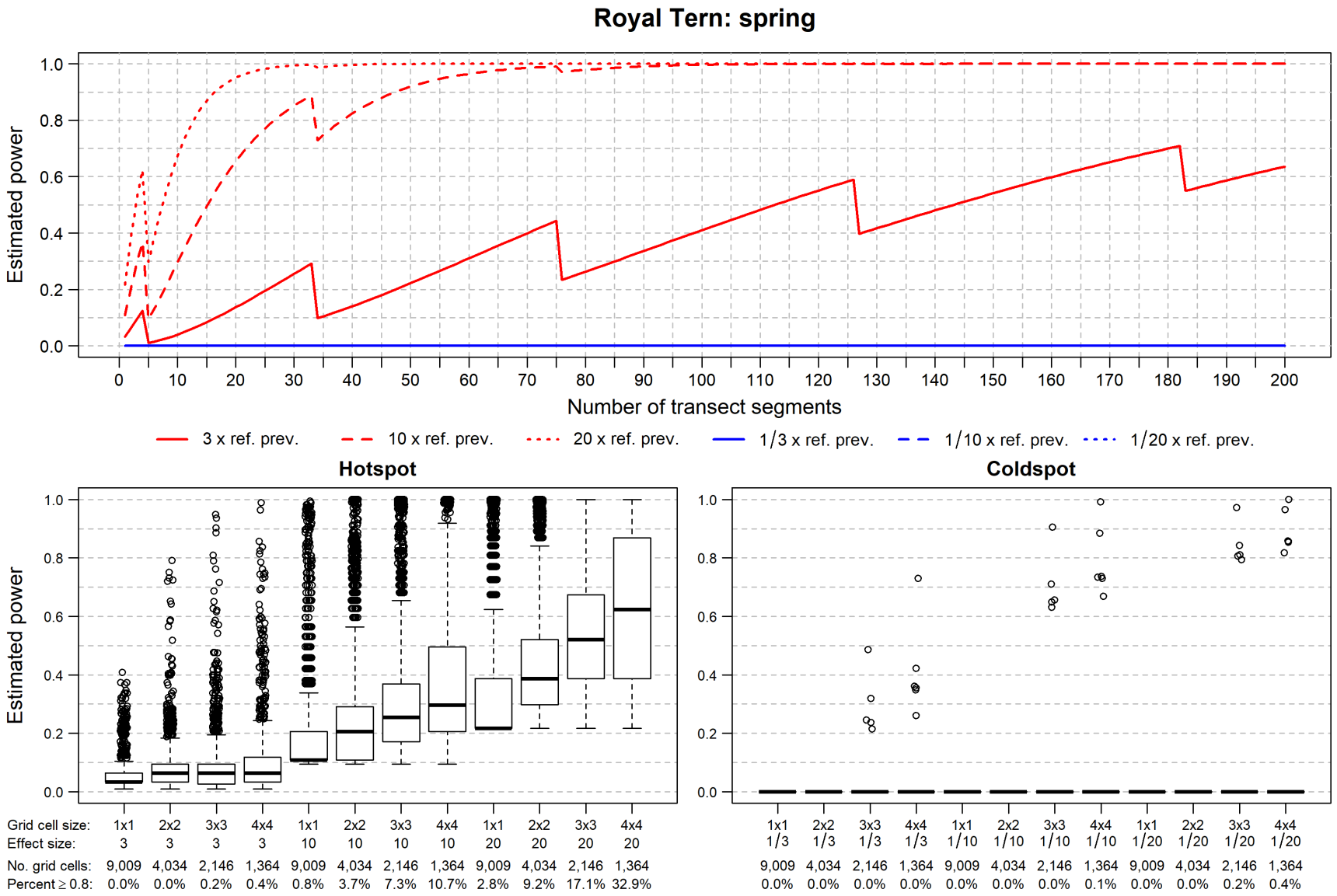

Figure C38. Power analysis results for Royal Tern during spring based on the occurrence probability model (type I error rate = 0.05)

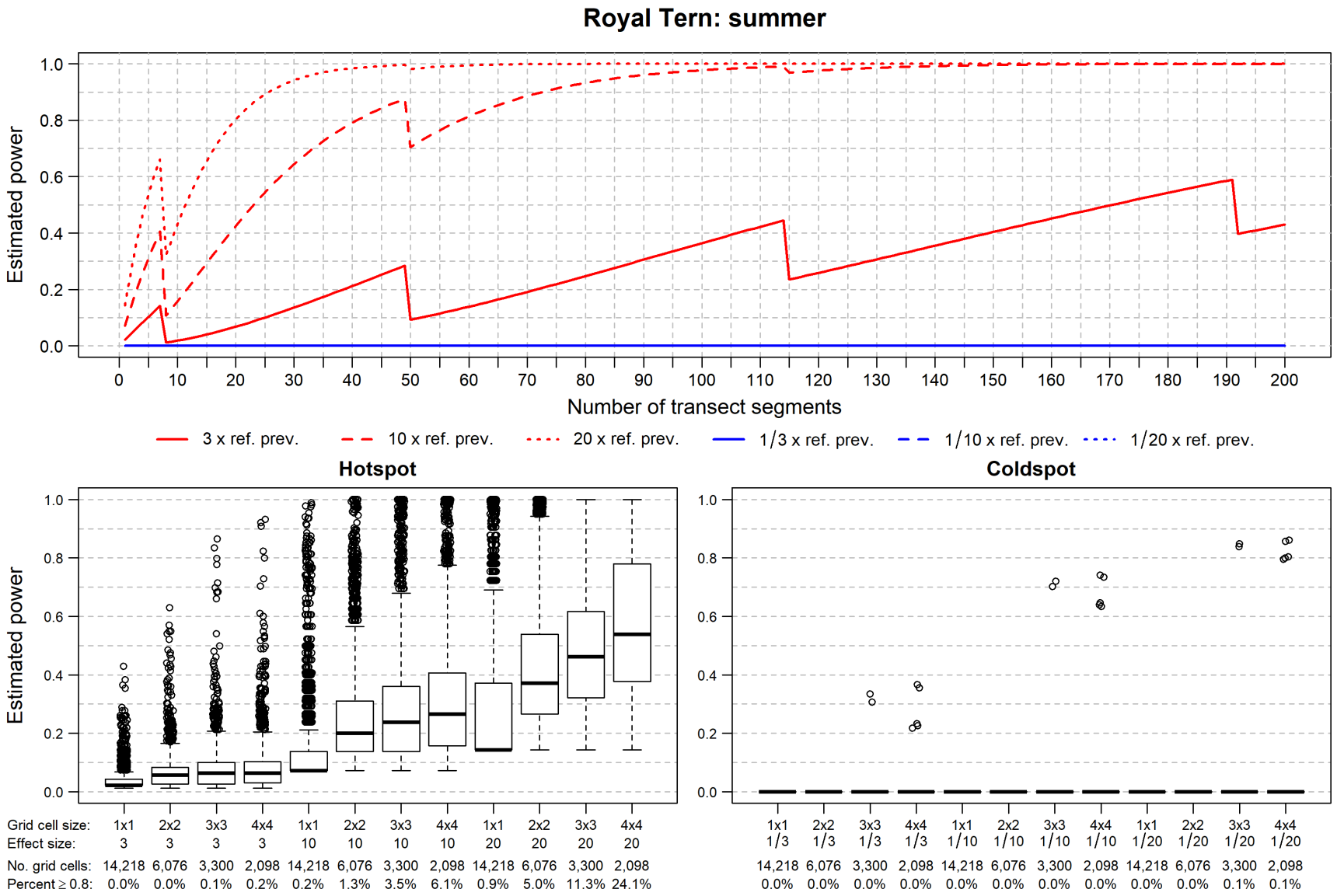

Figure C39. Power analysis results for Royal Tern during summer based on the occurrence probability model (type I error rate = 0.05)

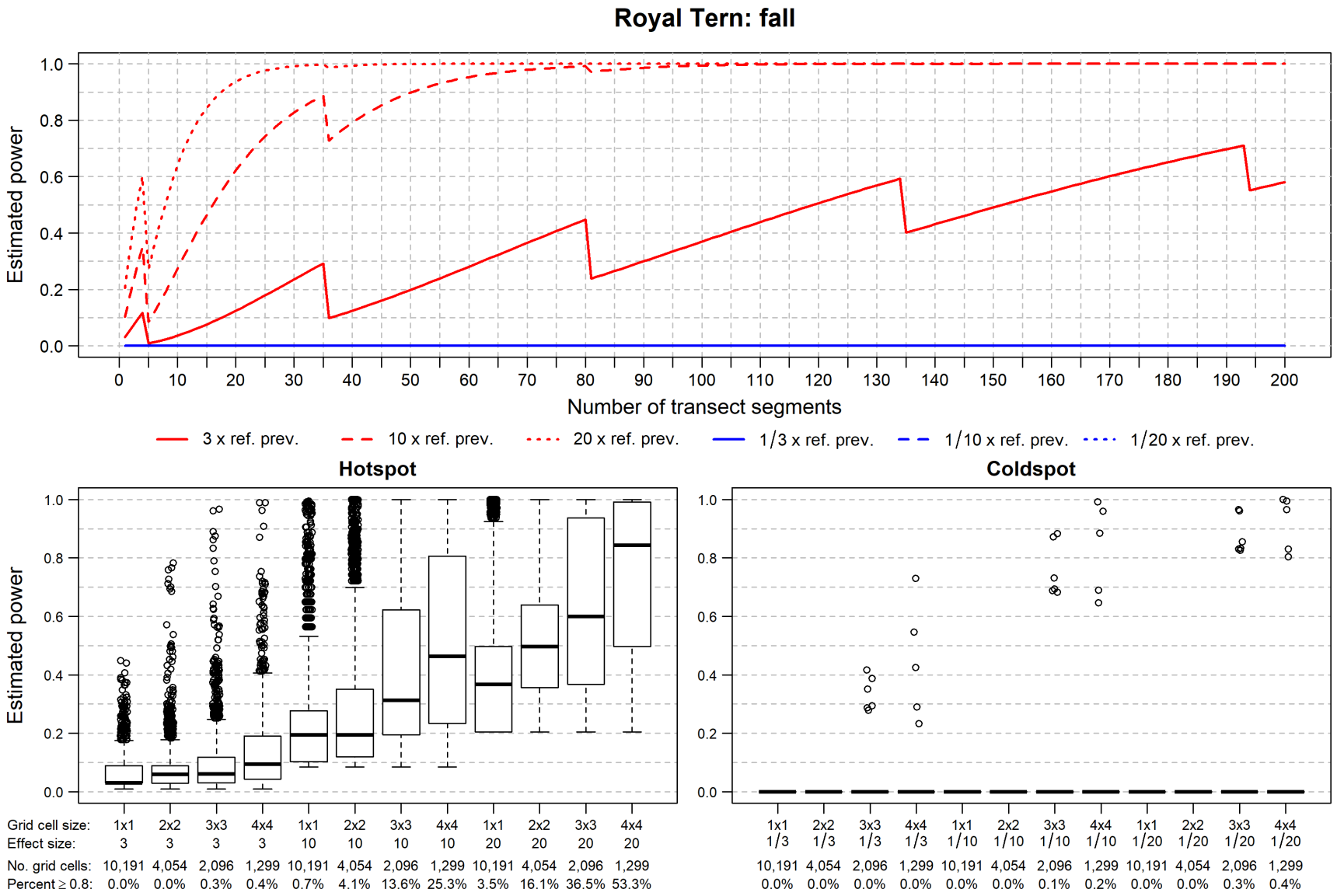

Figure C40. Power analysis results for Royal Tern during fall based on the occurrence probability model (type I error rate = 0.05)

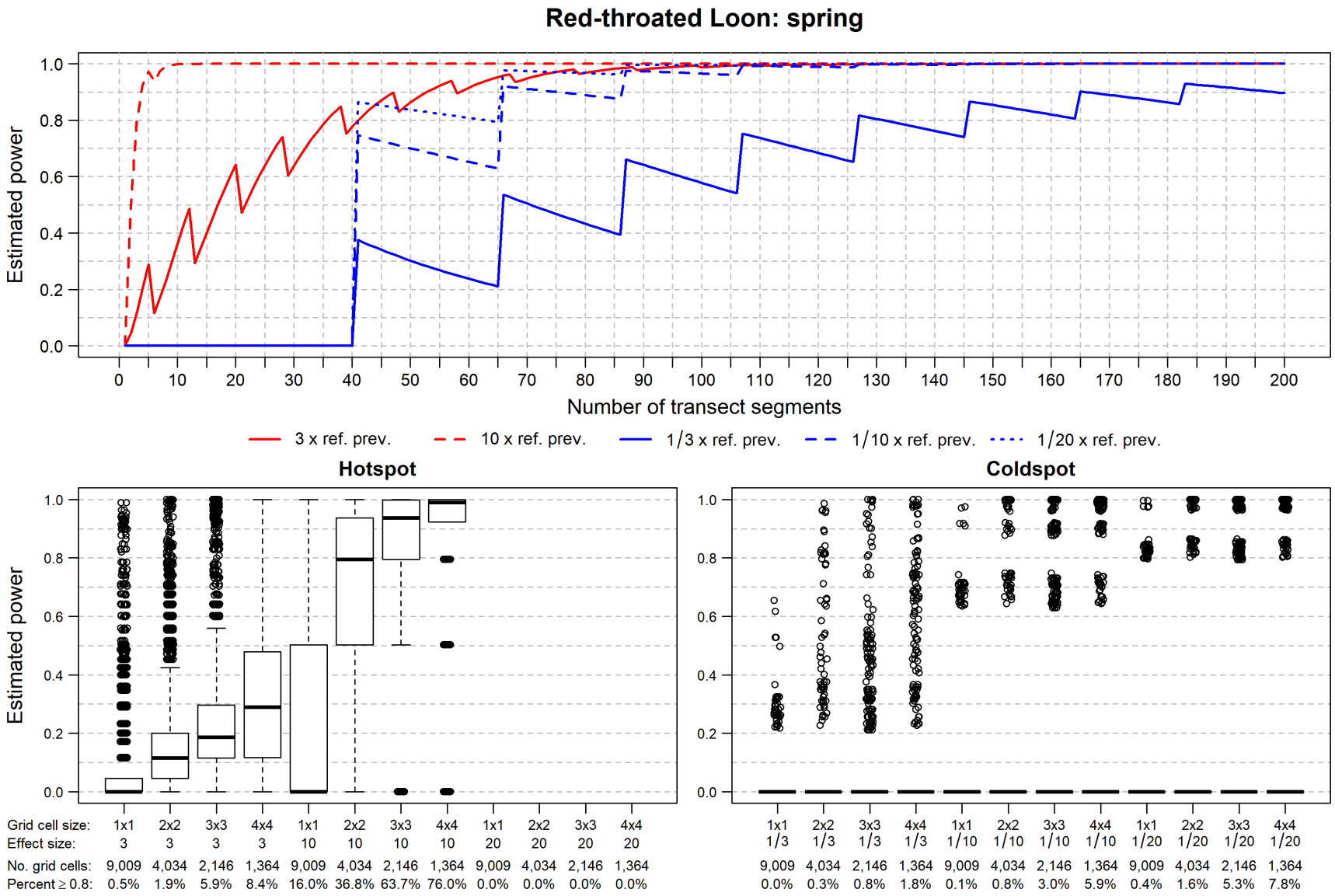

Figure C41. Power analysis results for Red-throated Loon during spring based on the occurrence probability model (type I error rate = 0.05)

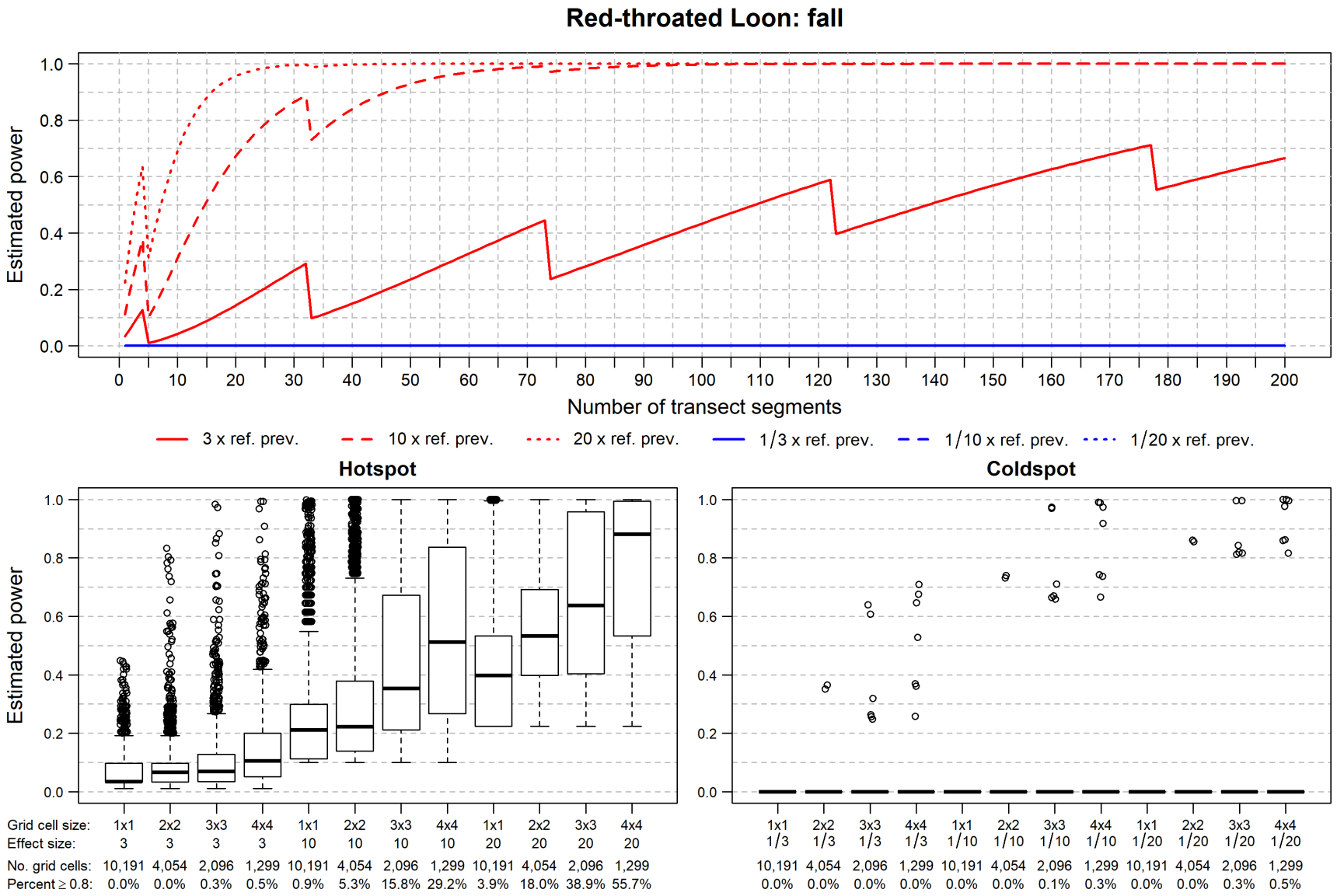

Figure C42. Power analysis results for Red-throated Loon during fall based on the occurrence probability model (type I error rate = 0.05)

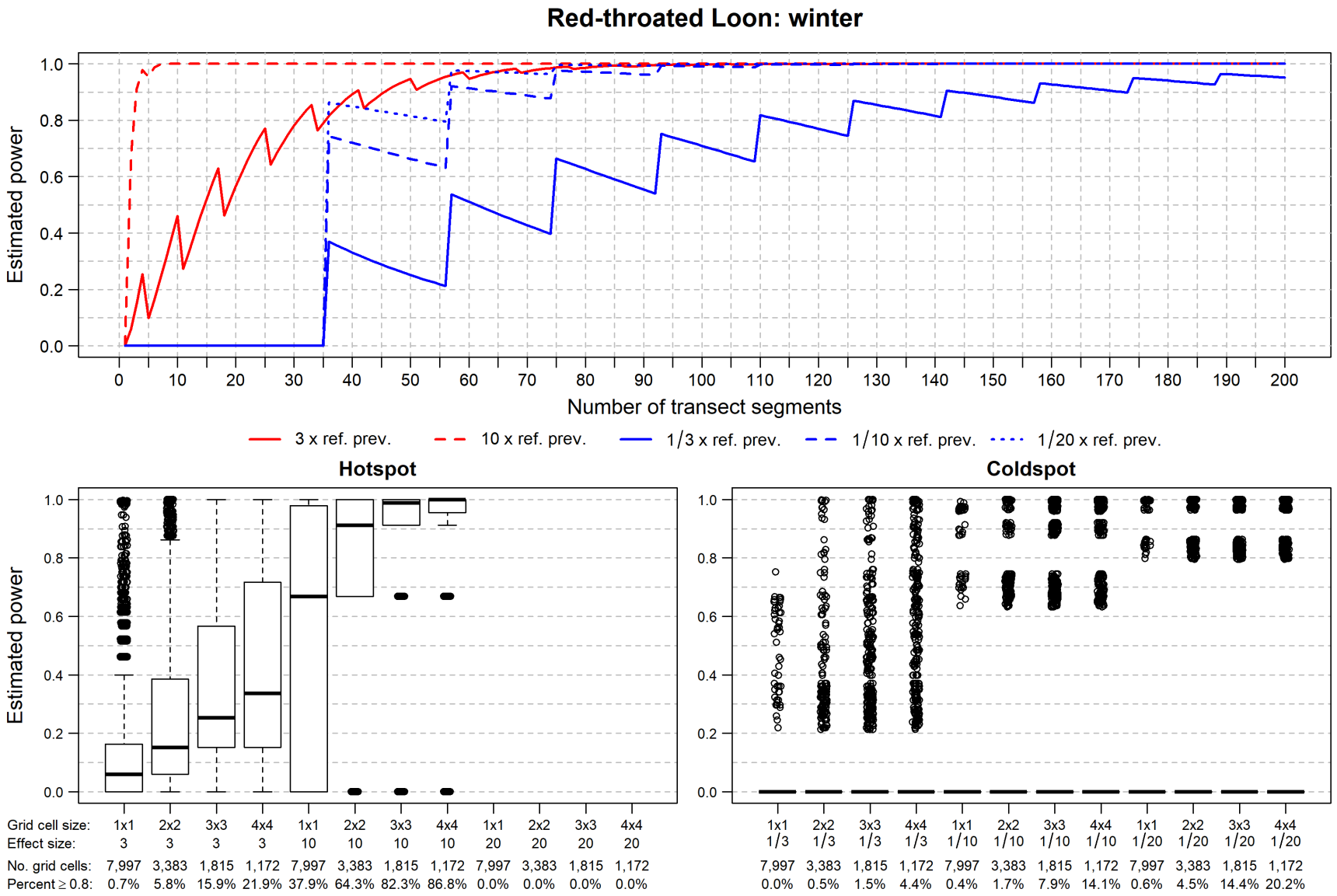

Figure C43. Power analysis results for Red-throated Loon during winter based on the occurrence probability model (type I error rate = 0.05)

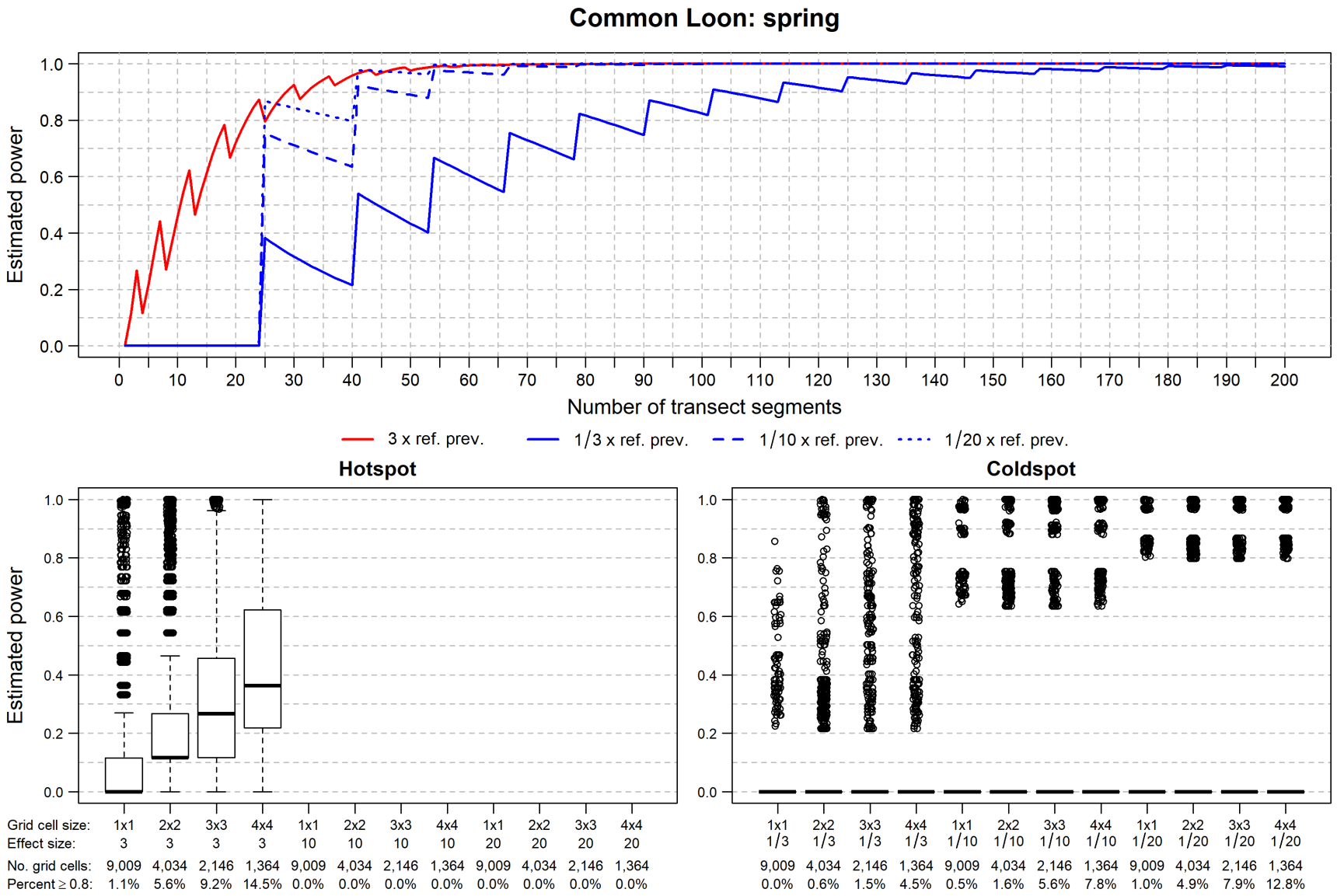

Figure C44. Power analysis results for Common Loon during spring based on the occurrence probability model (type I error rate = 0.05)

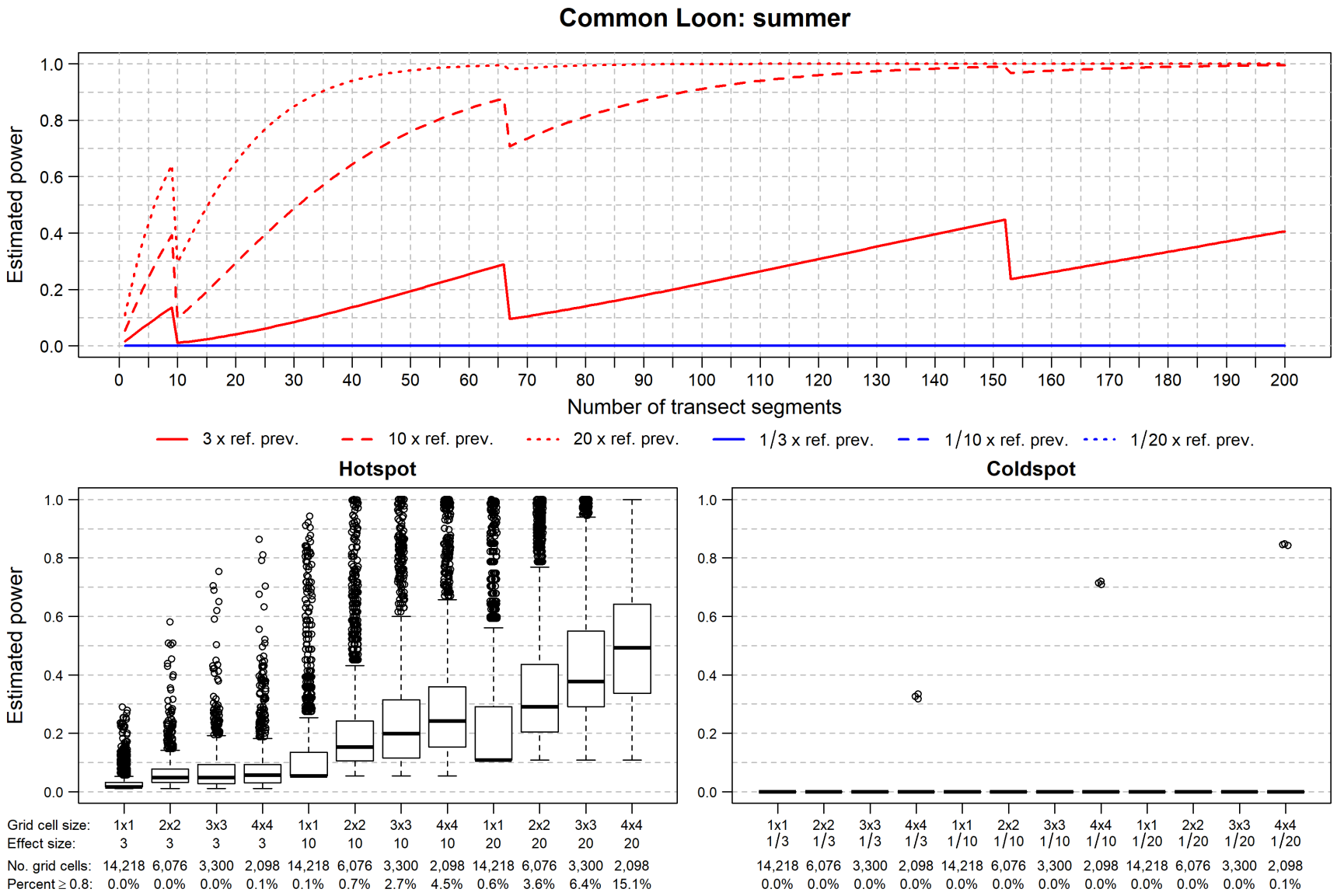

Figure C45. Power analysis results for Common Loon during summer based on the occurrence probability model (type I error rate = 0.05)

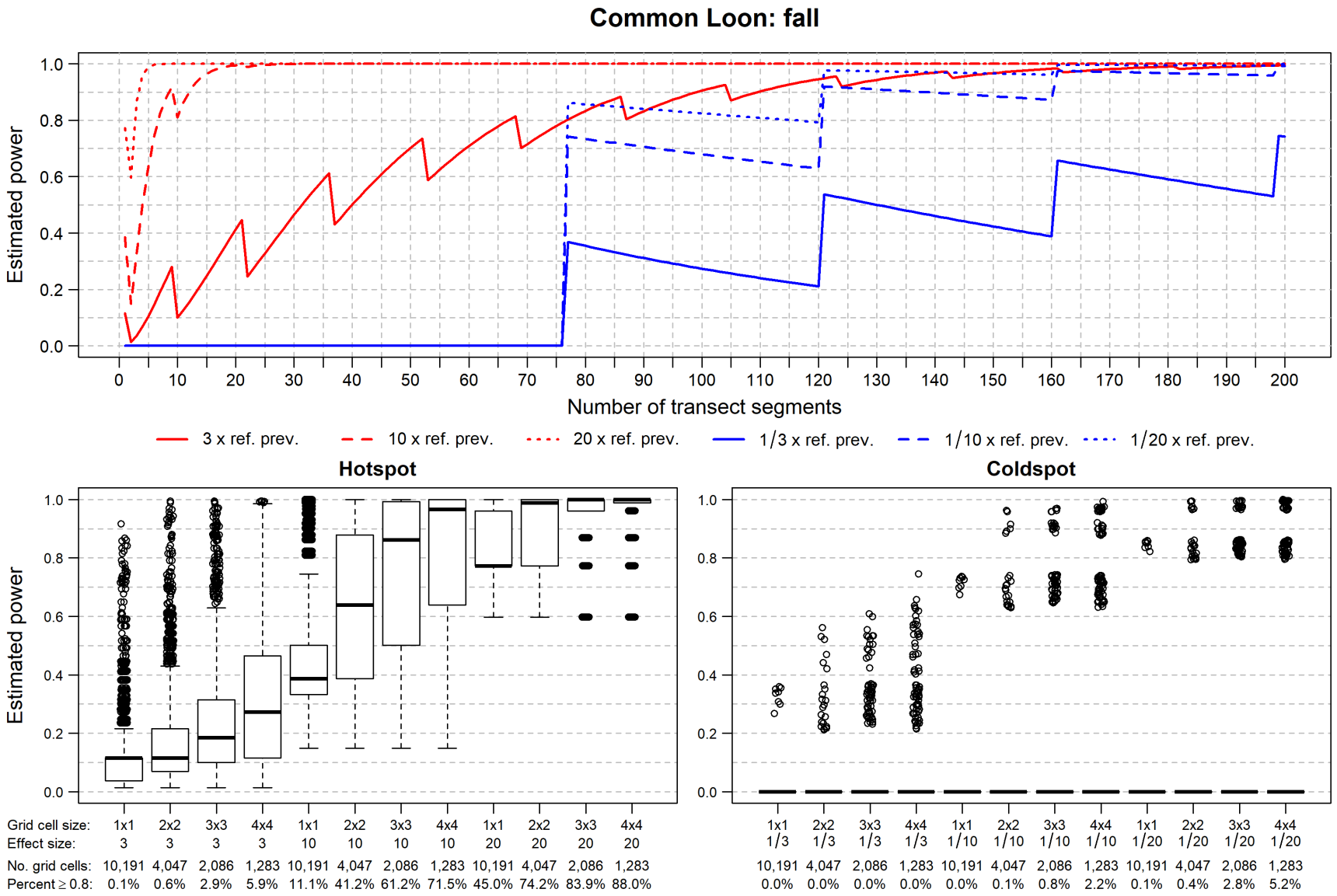

Figure C46. Power analysis results for Common Loon during fall based on the occurrence probability model (type I error rate = 0.05)

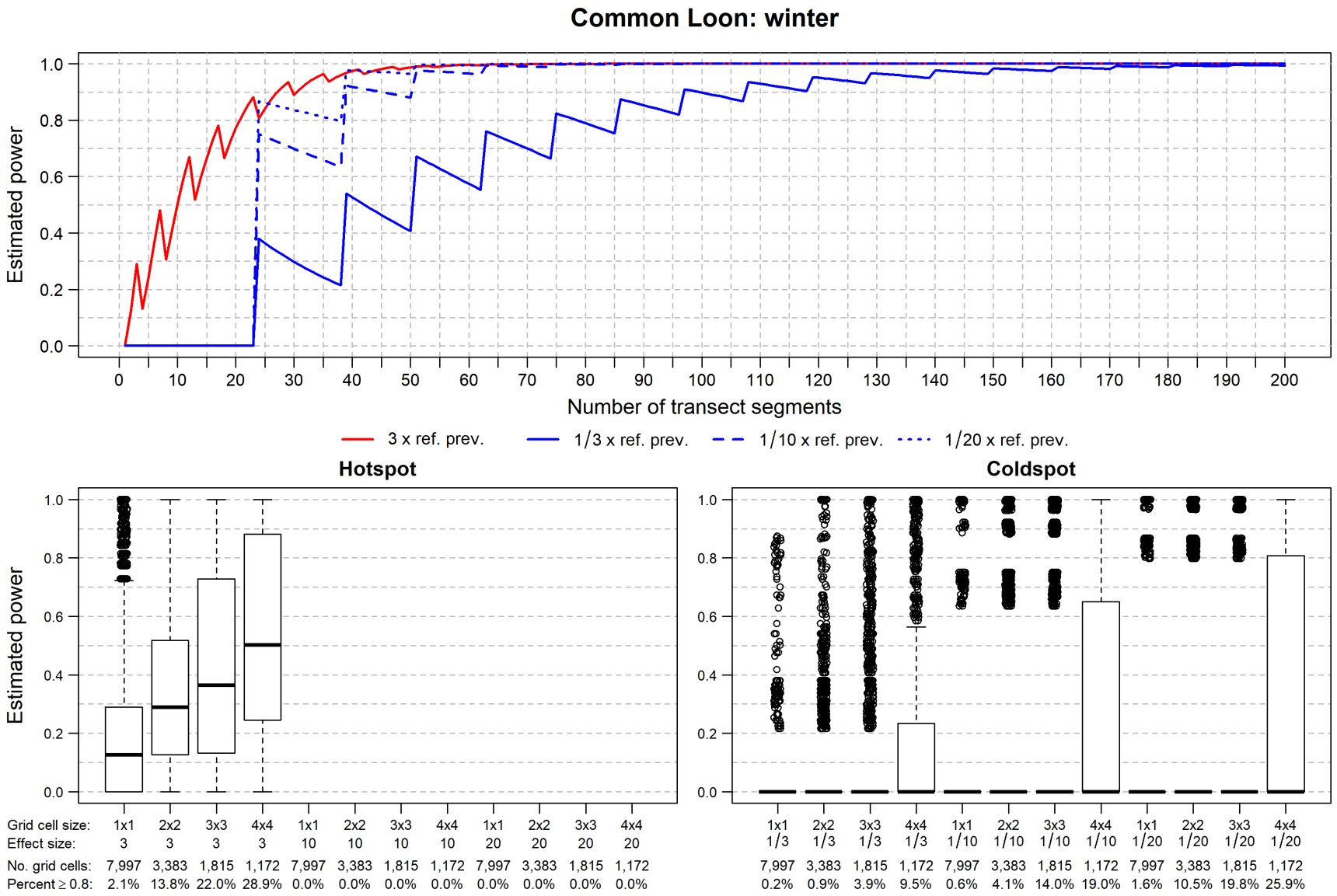

Figure C47. Power analysis results for Common Loon during winter based on the occurrence probability model (type I error rate = 0.05)

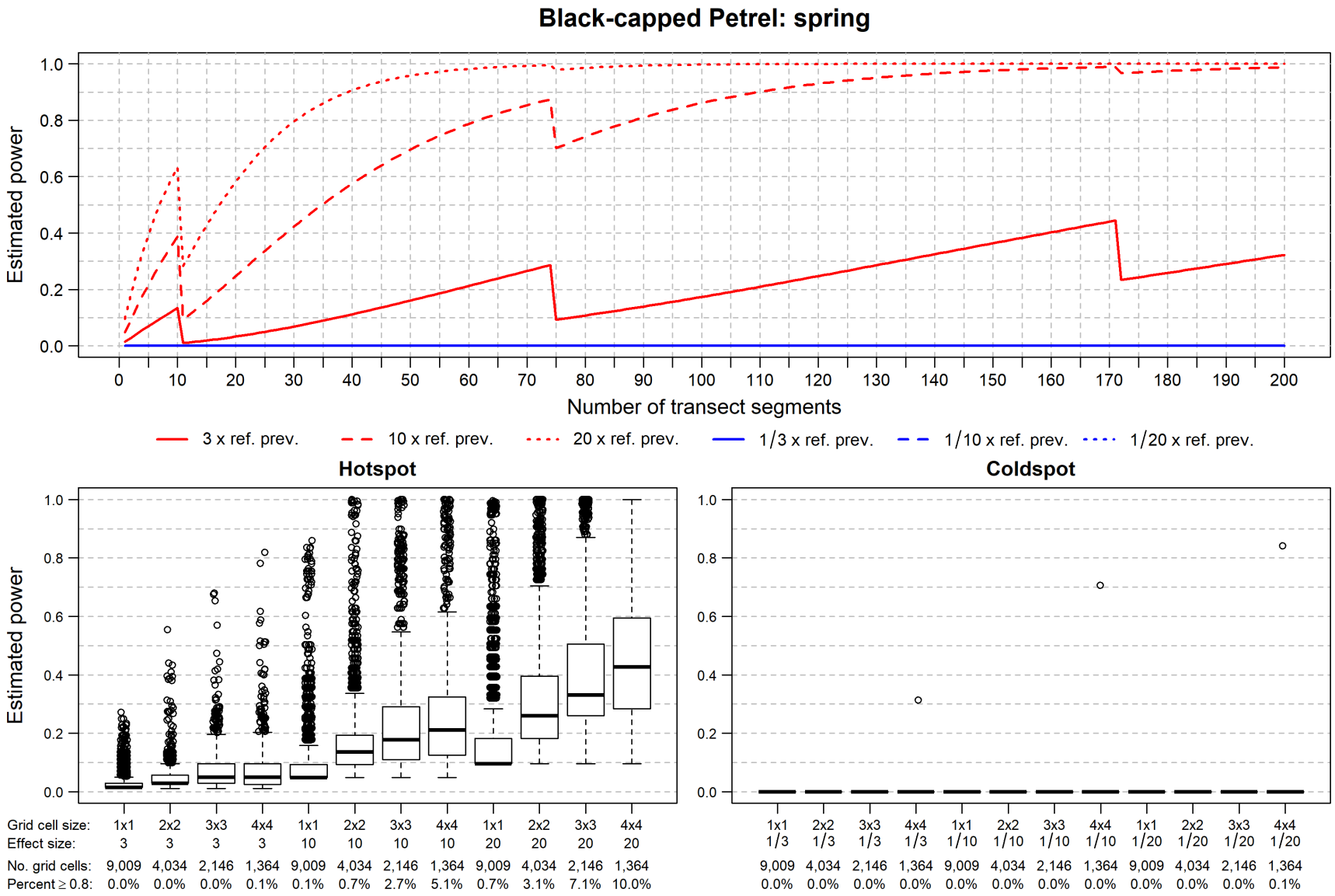

Figure C48. Power analysis results for Black-capped Petrel during spring based on the occurrence probability model (type I error rate = 0.05)

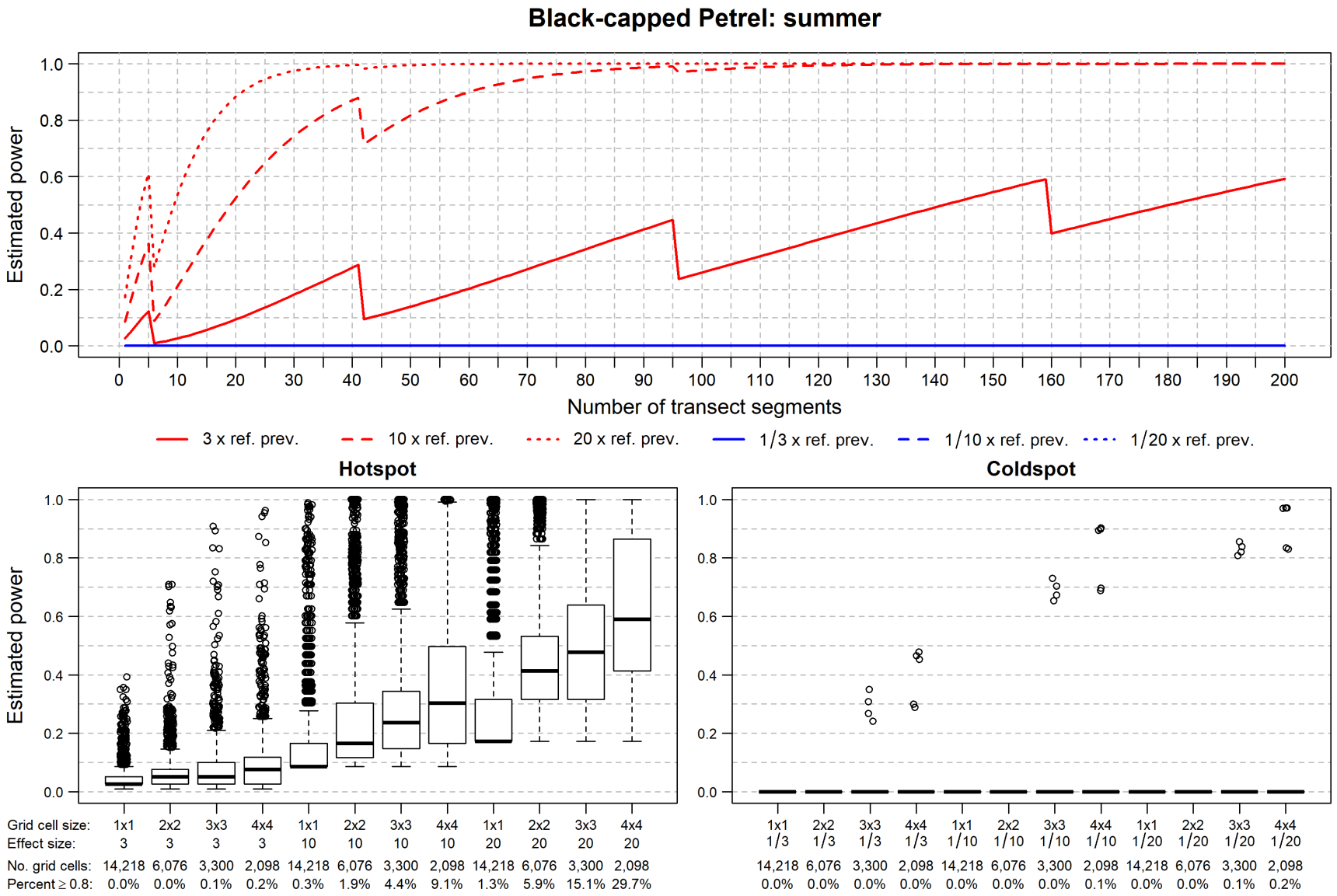

Figure C49. Power analysis results for Black-capped Petrel during summer based on the occurrence probability model (type I error rate = 0.05)

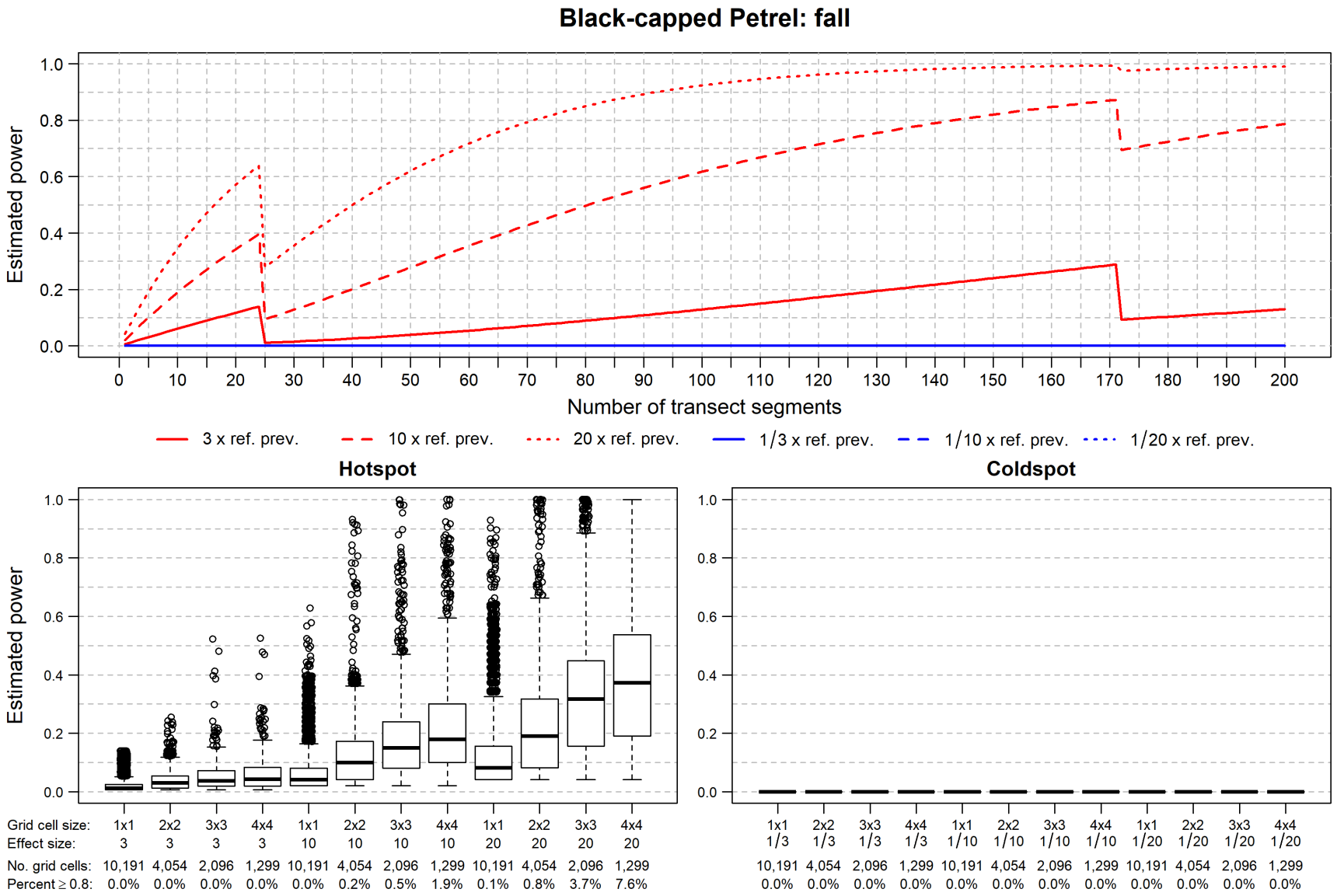

Figure C50. Power analysis results for Black-capped Petrel during fall based on the occurrence probability model (type I error rate = 0.05)

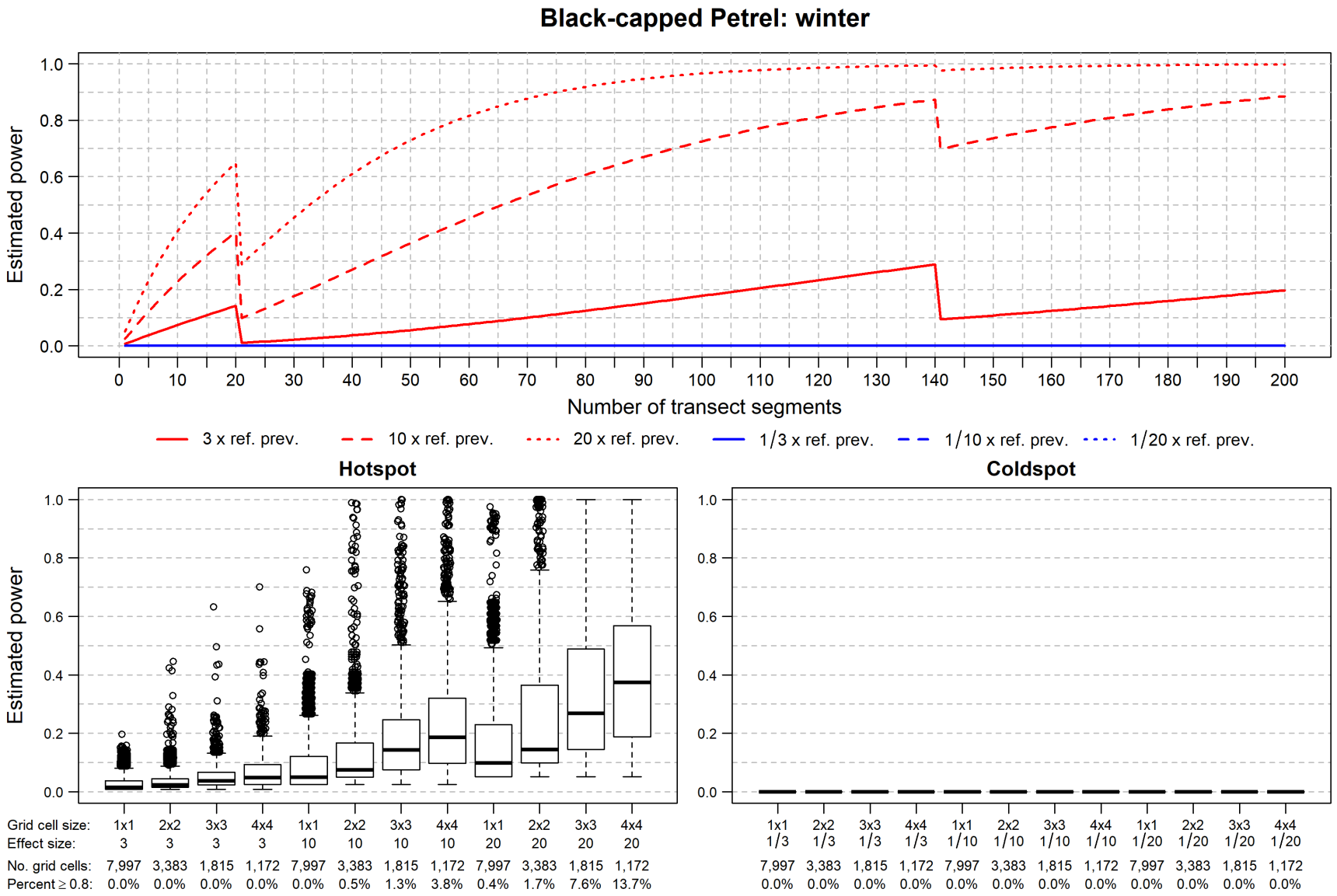

Figure C51. Power analysis results for Black-capped Petrel during winter based on the occurrence probability model (type I error rate = 0.05)

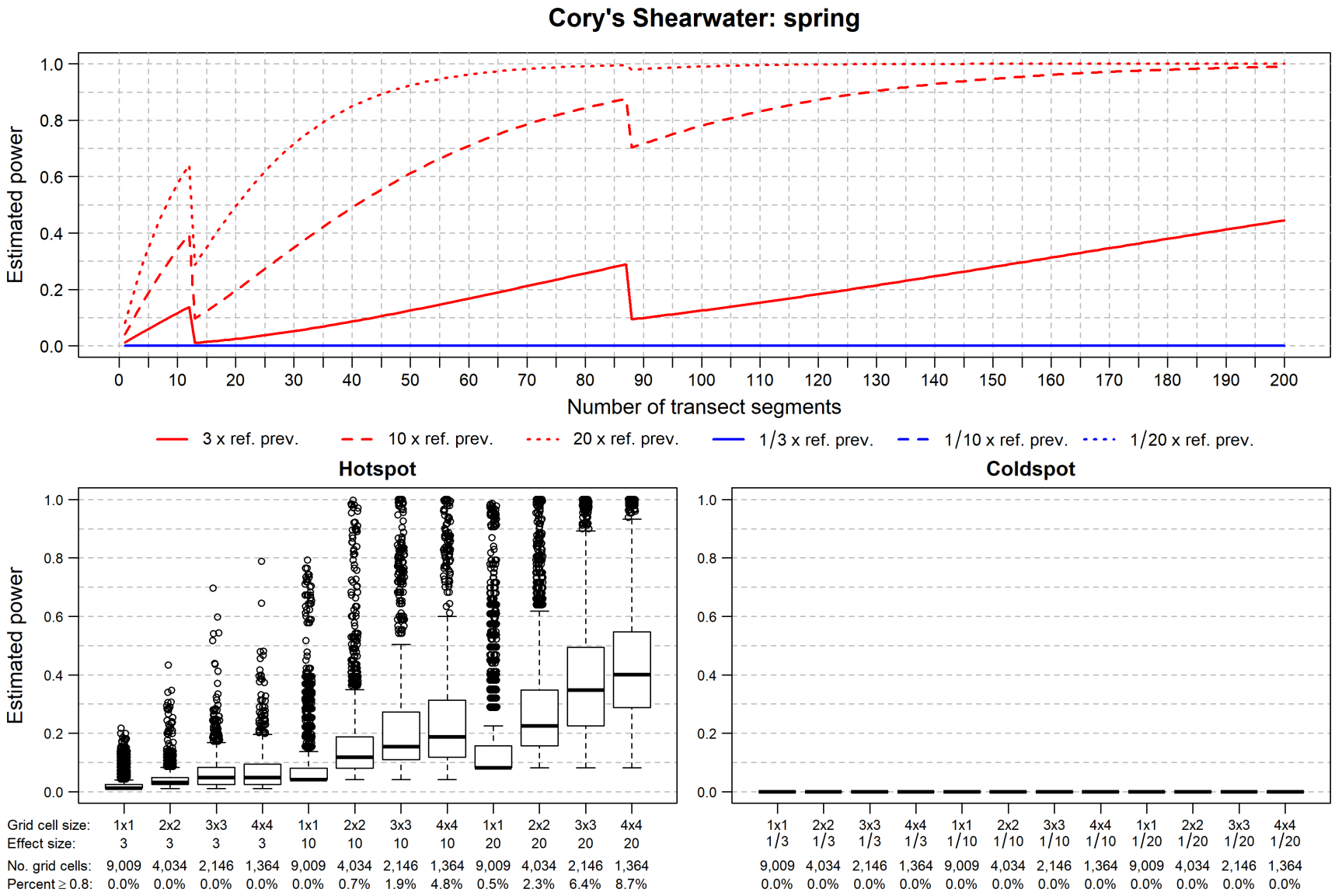

Figure C52. Power analysis results for Cory's Shearwater during spring based on the occurrence probability model (type I error rate = 0.05)

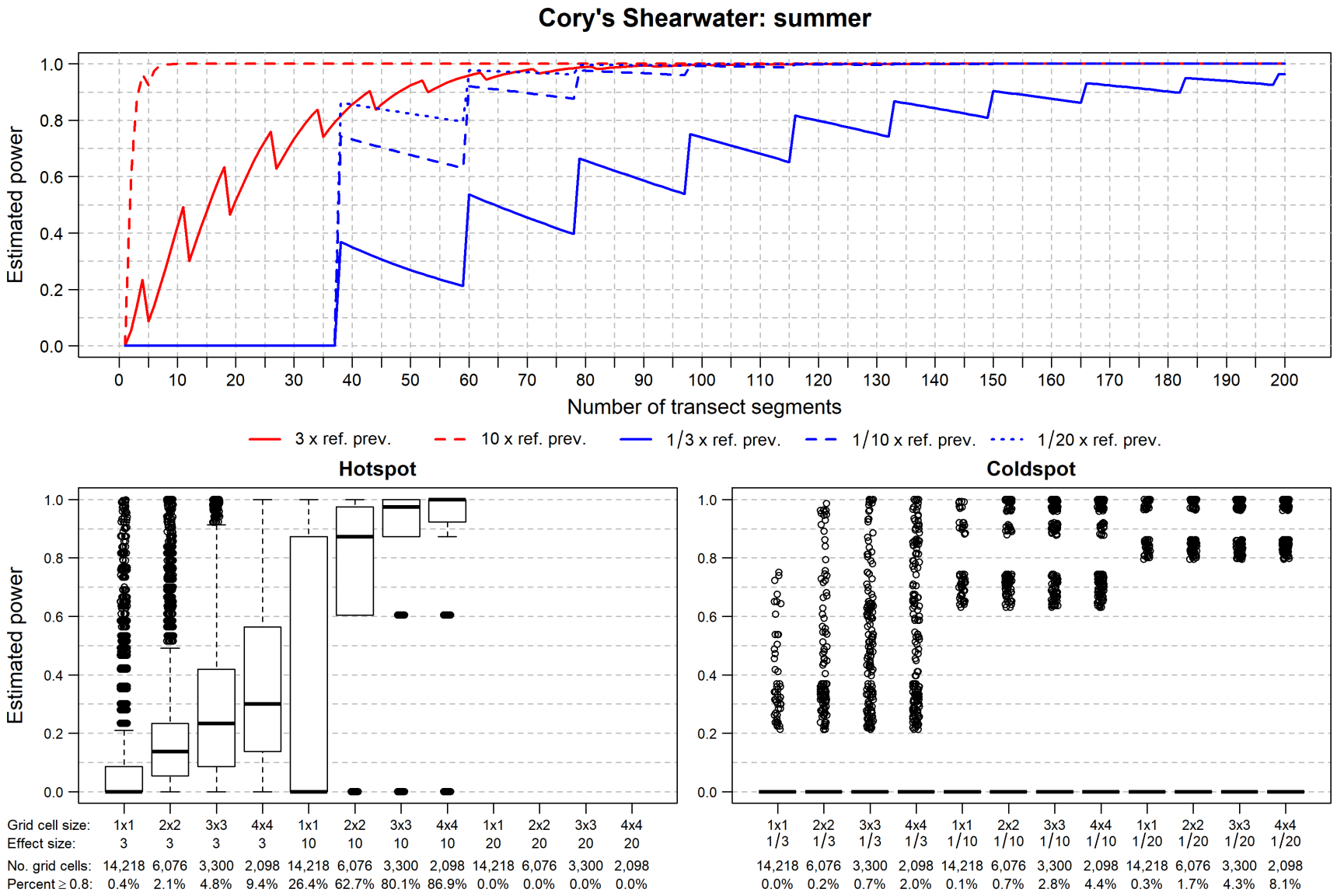

Figure C53. Power analysis results for Cory's Shearwater during summer based on the occurrence probability model (type I error rate = 0.05)

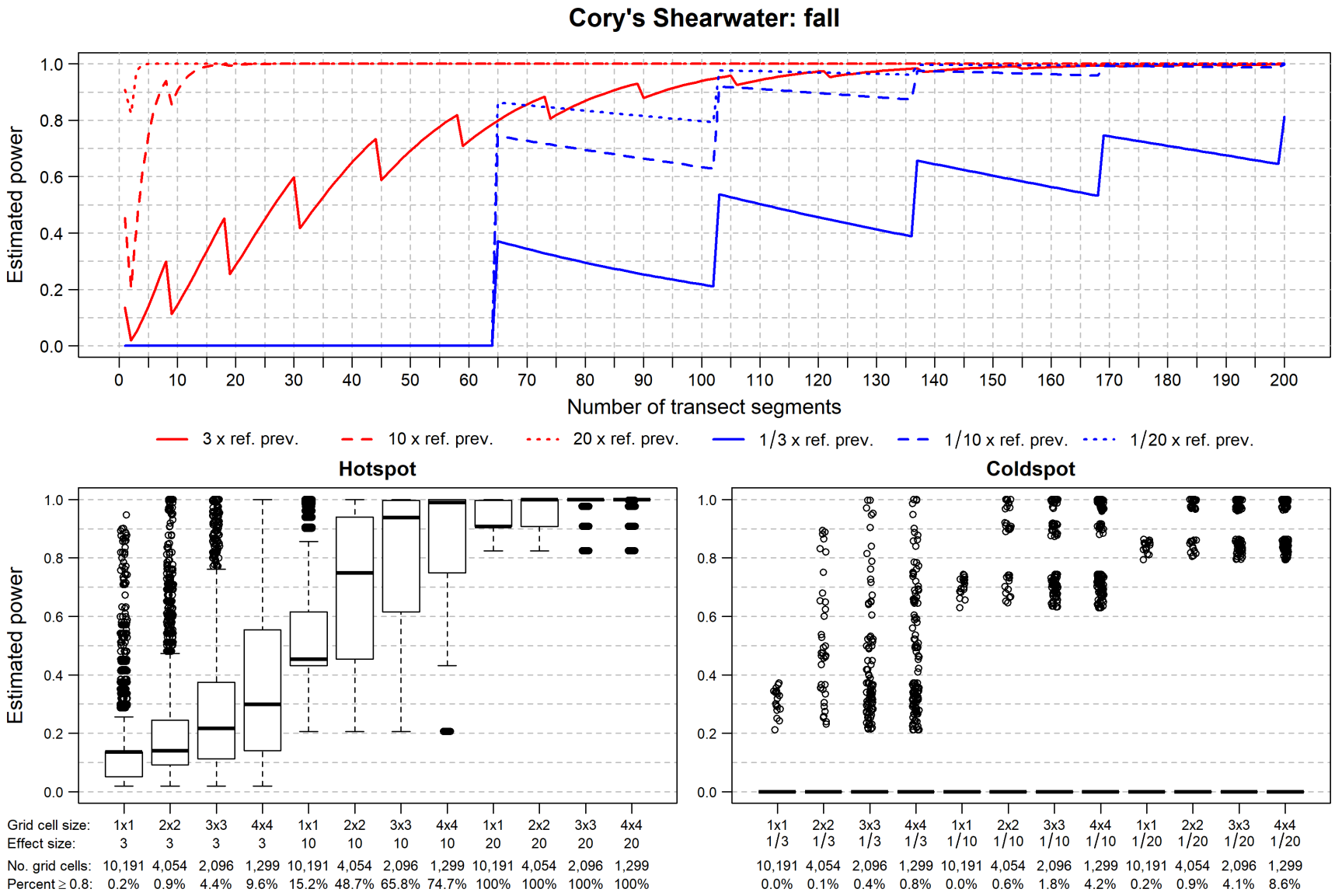

Figure C54. Power analysis results for Cory's Shearwater during fall based on the occurrence probability model (type I error rate = 0.05)

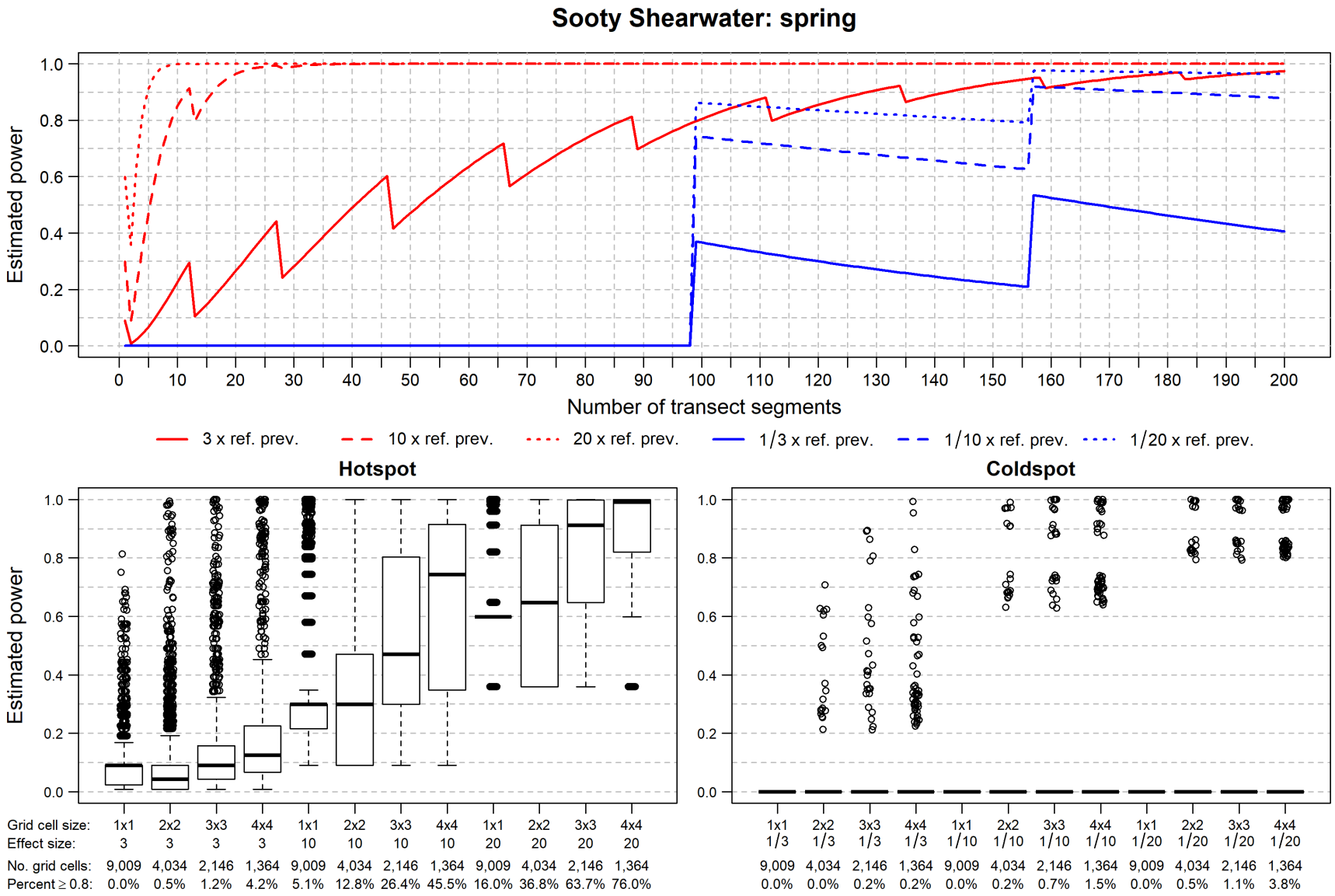

Figure C55. Power analysis results for Sooty Shearwater during spring based on the occurrence probability model (type I error rate = 0.05)

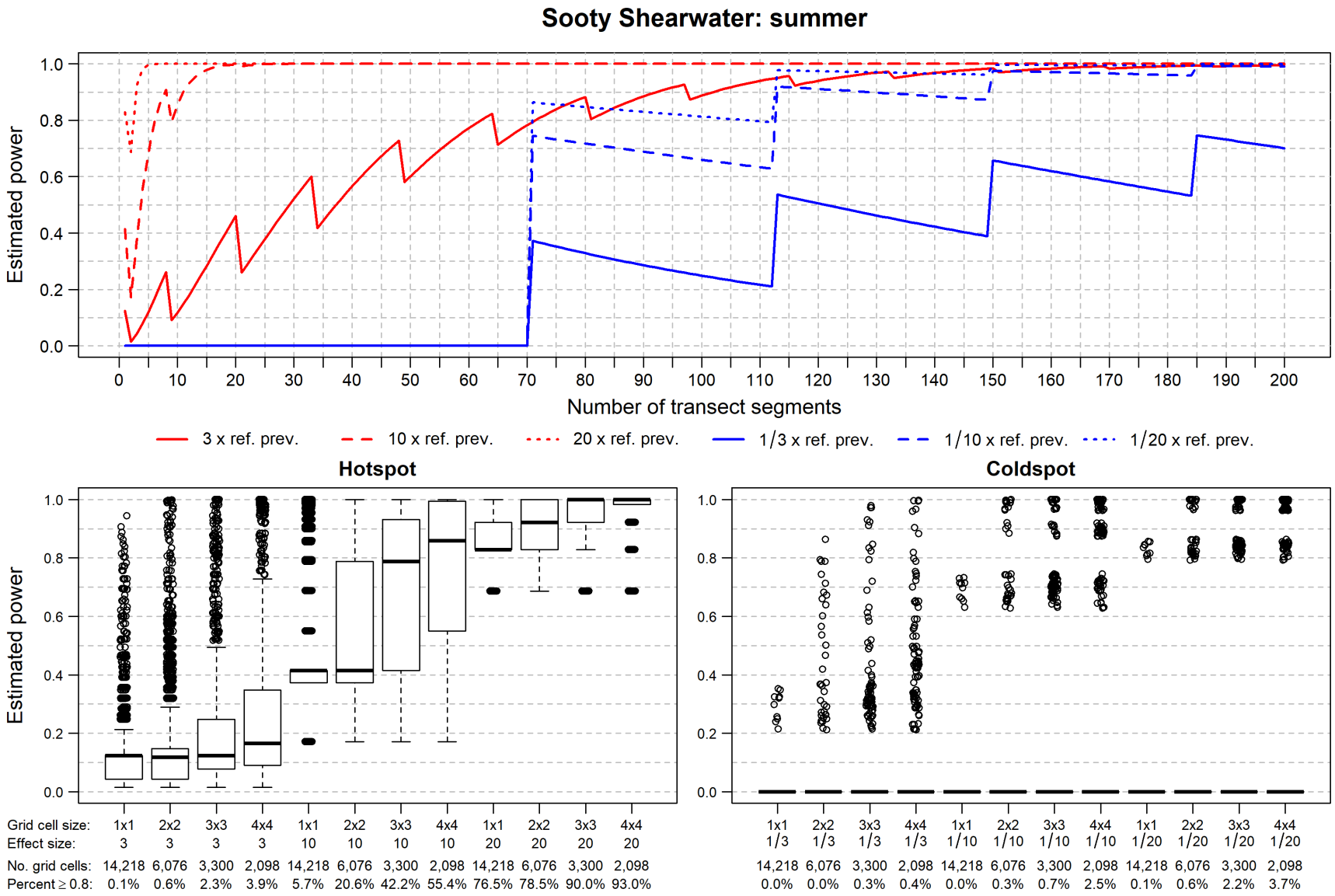

Figure C56. Power analysis results for Sooty Shearwater during summer based on the occurrence probability model (type I error rate = 0.05)

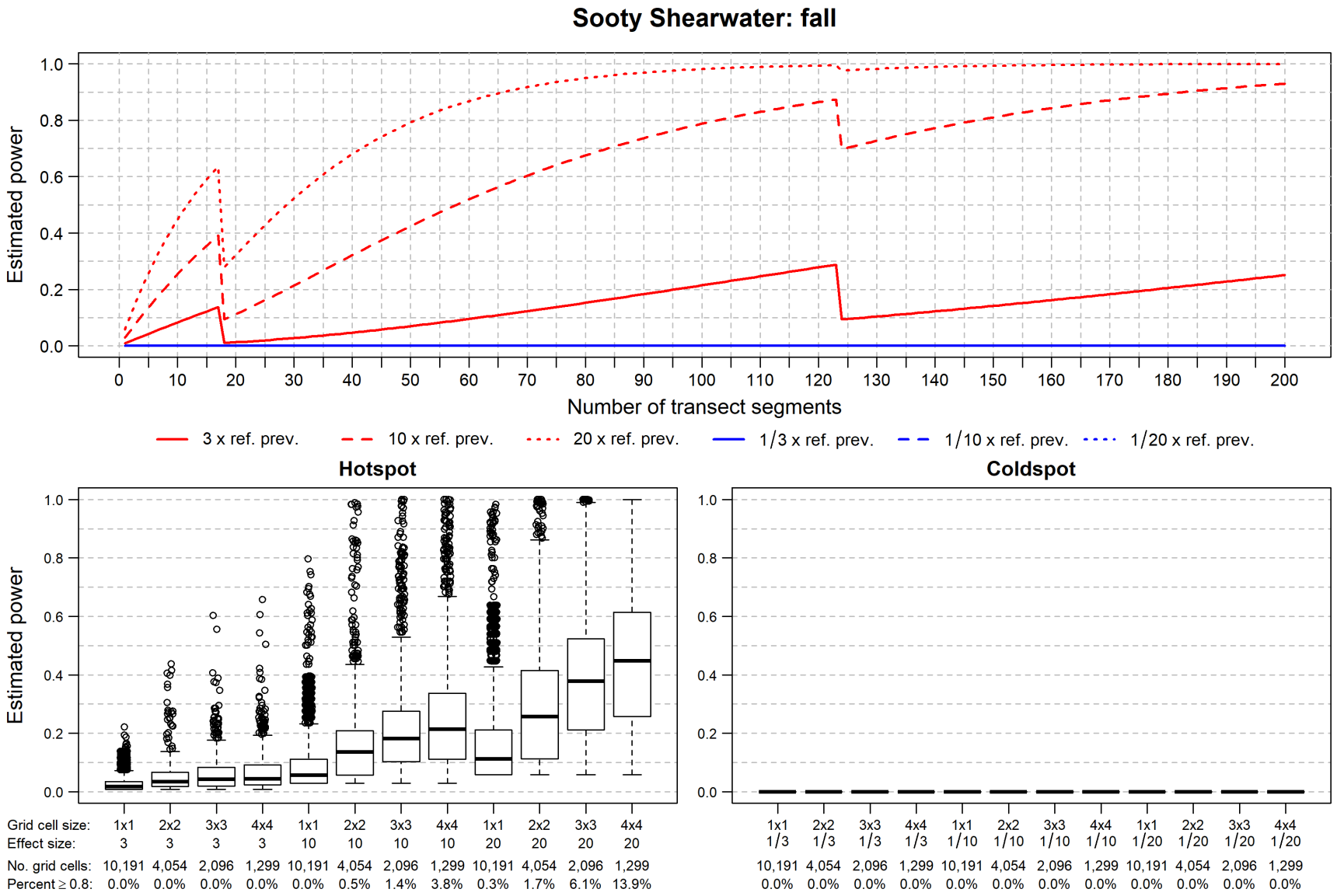

Figure C57. Power analysis results for Sooty Shearwater during fall based on the occurrence probability model (type I error rate = 0.05)

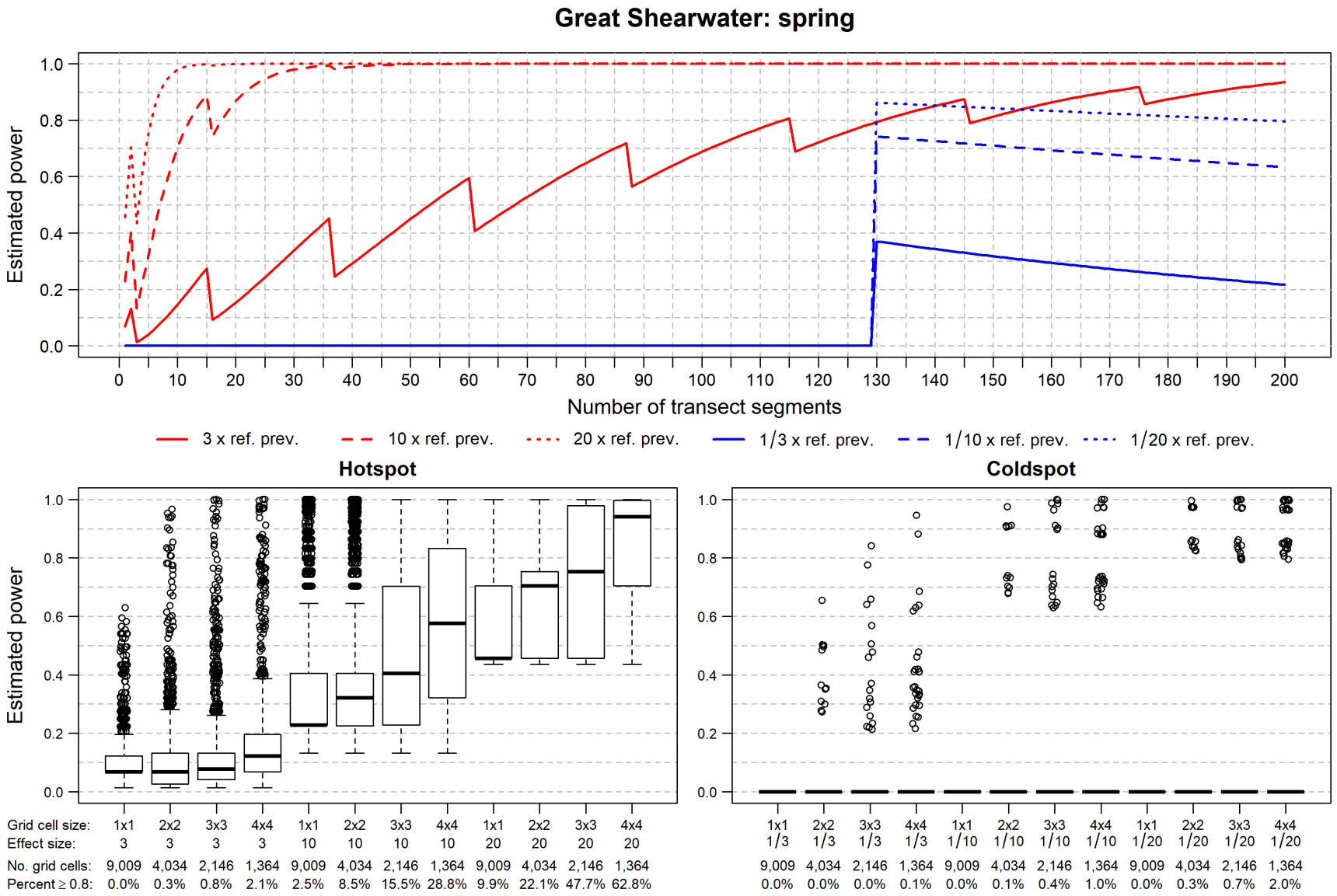

Figure C58. Power analysis results for Great Shearwater during spring based on the occurrence probability model (type I error rate = 0.05)

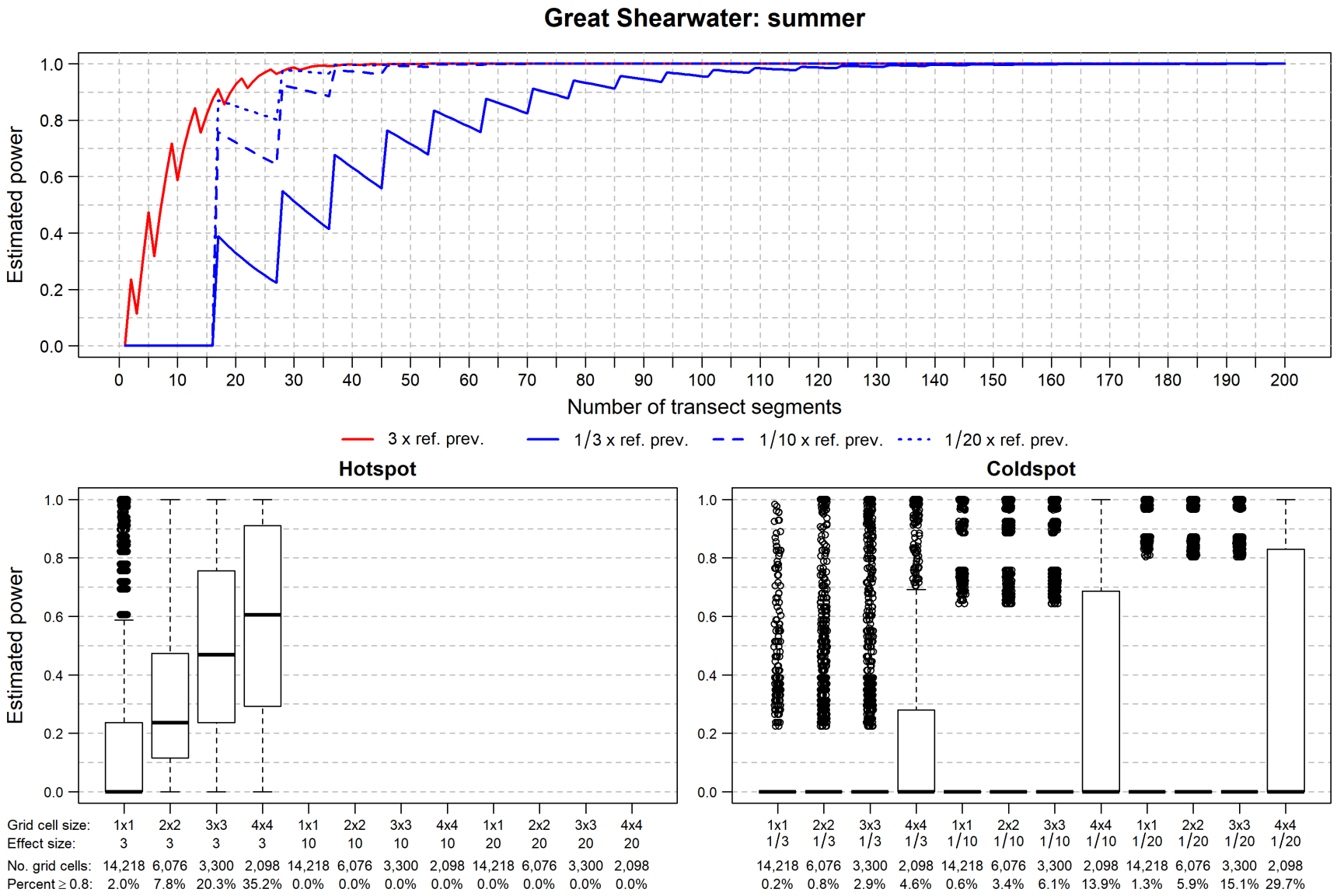

Figure C59. Power analysis results for Great Shearwater during summer based on the occurrence probability model (type I error rate = 0.05)

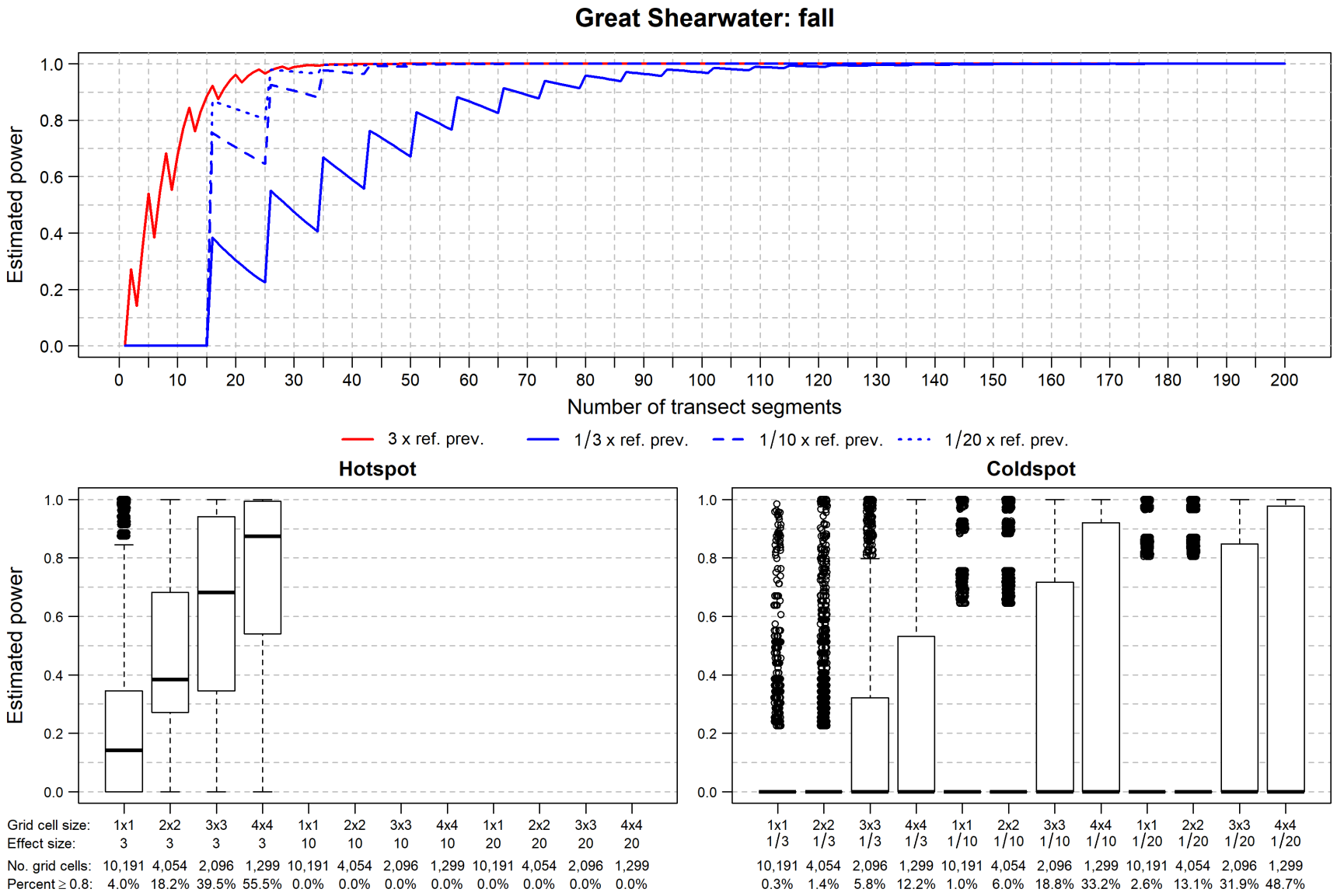

Figure C60. Power analysis results for Great Shearwater during fall based on the occurrence probability model (type I error rate = 0.05)

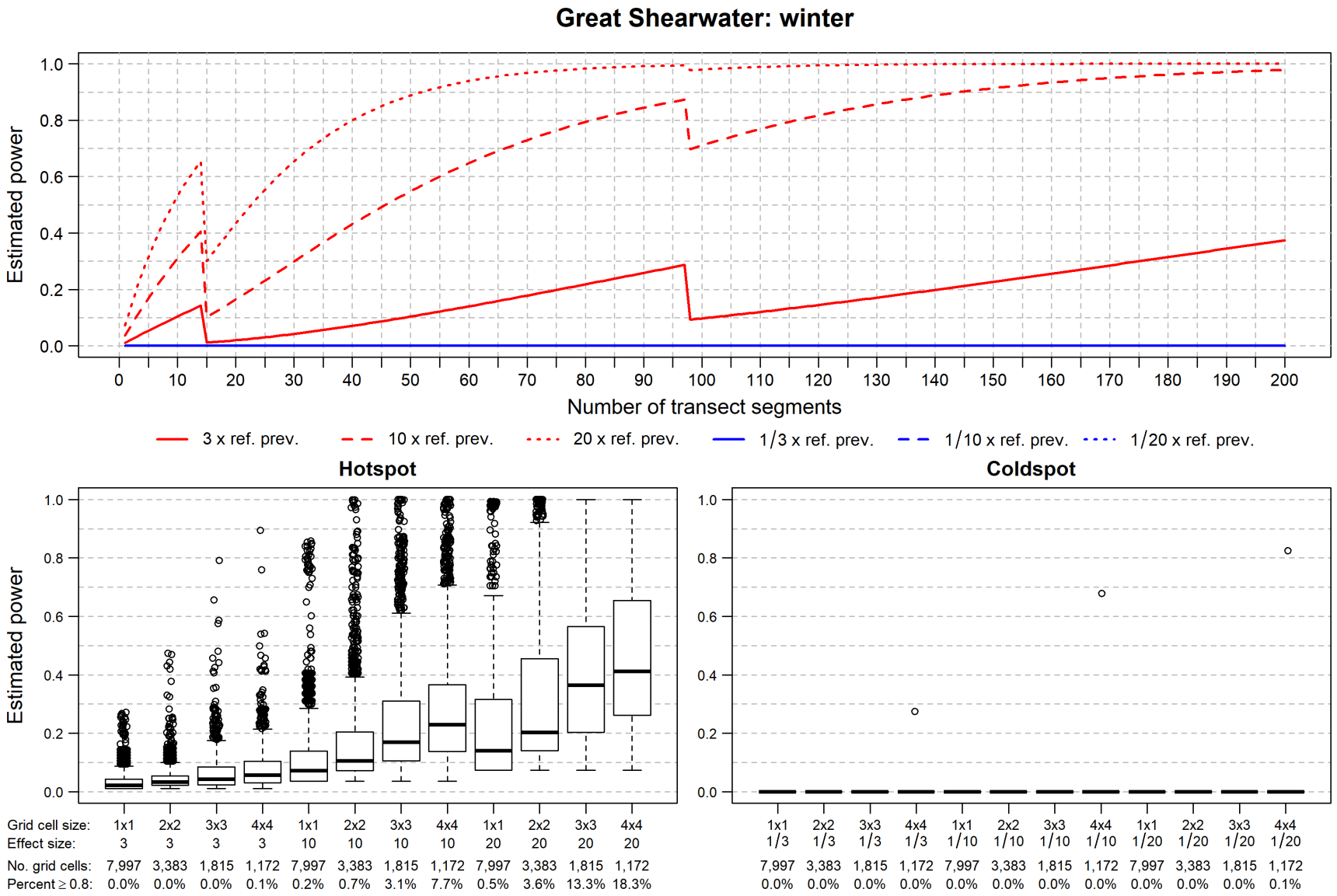

Figure C61. Power analysis results for Great Shearwater during winter based on the occurrence probability model (type I error rate = 0.05)

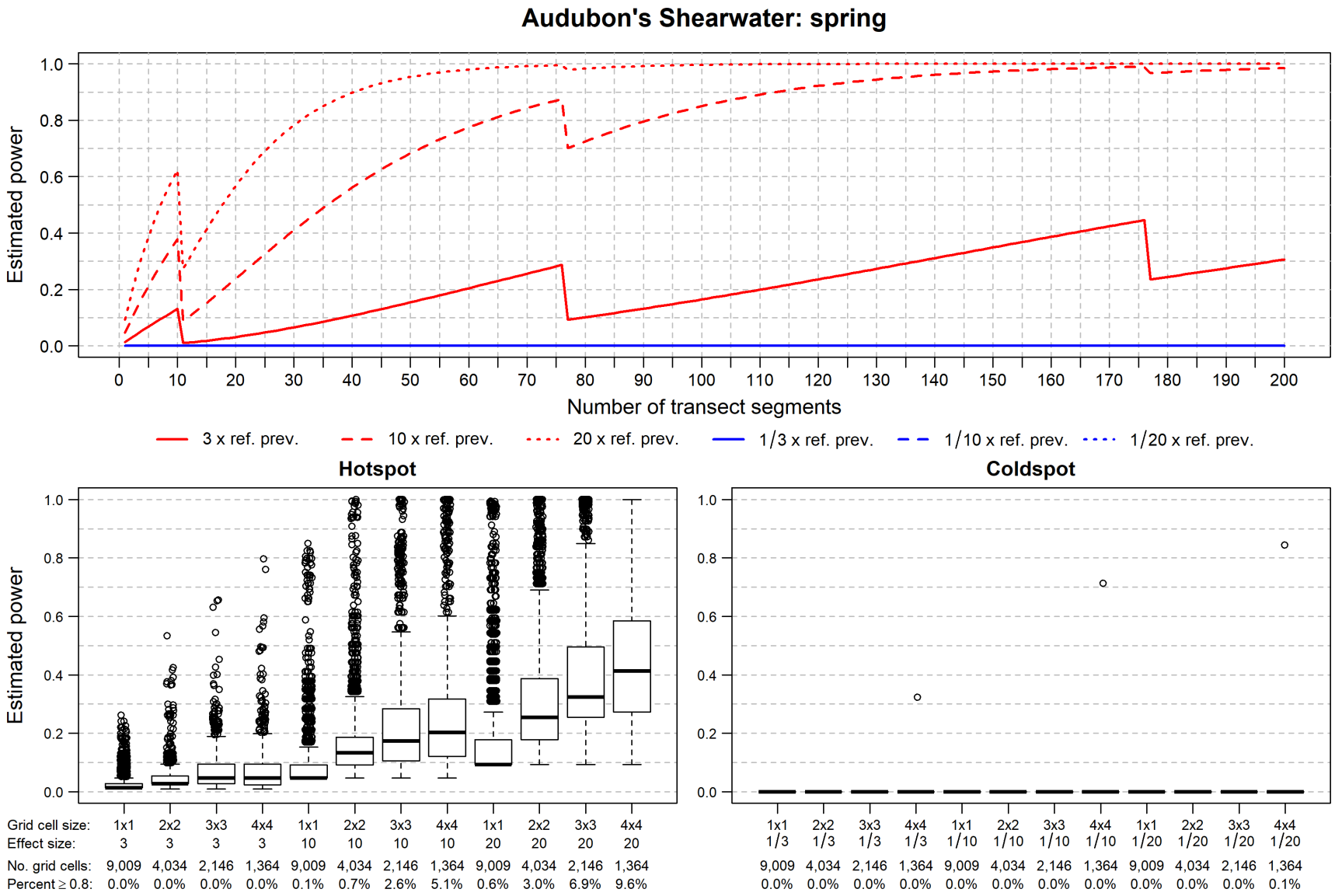

Figure C62. Power analysis results for Audubon's Shearwater during spring based on the occurrence probability model (type I error rate = 0.05)

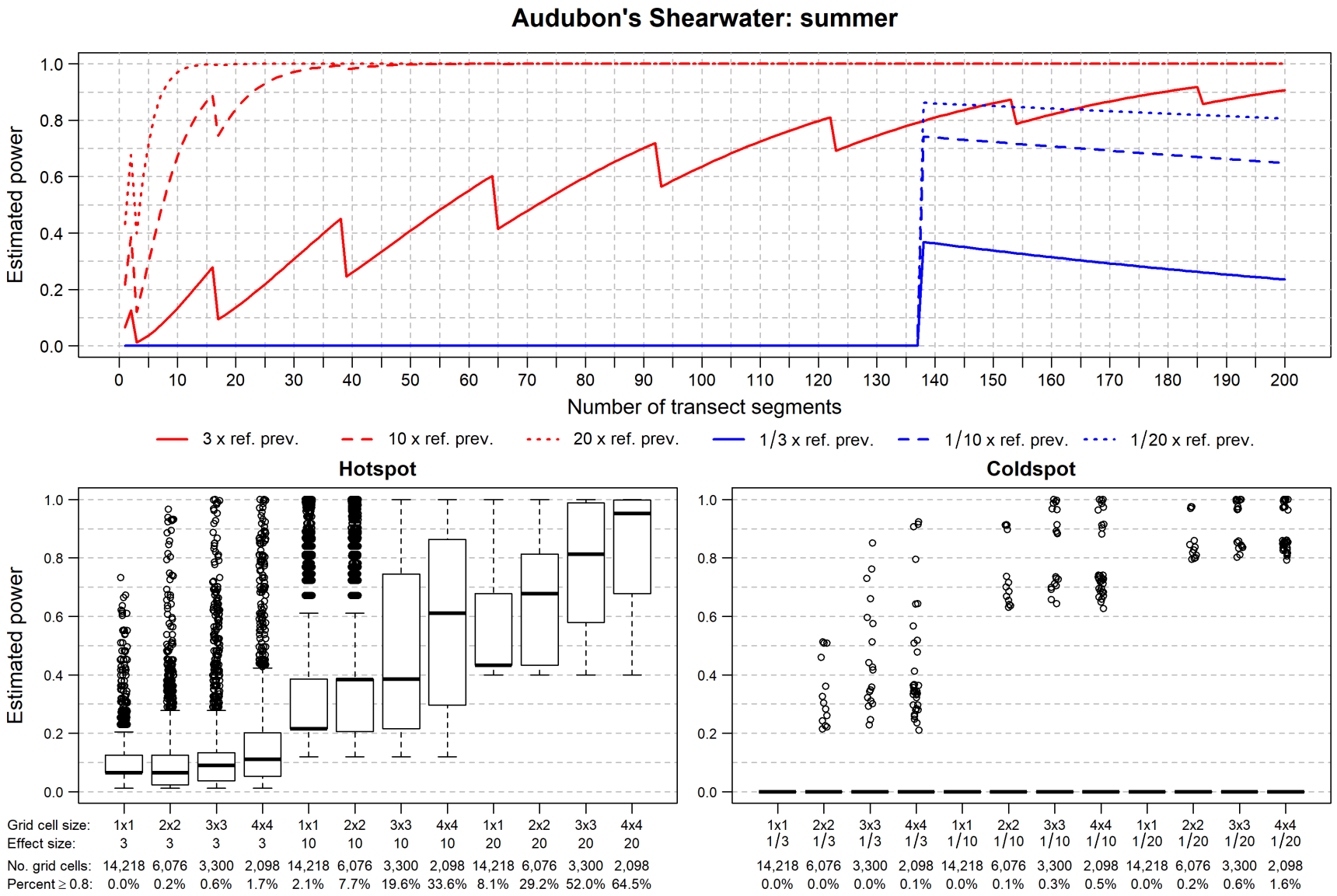

Figure C63. Power analysis results for Audubon's Shearwater during summer based on the occurrence probability model (type I error rate = 0.05)

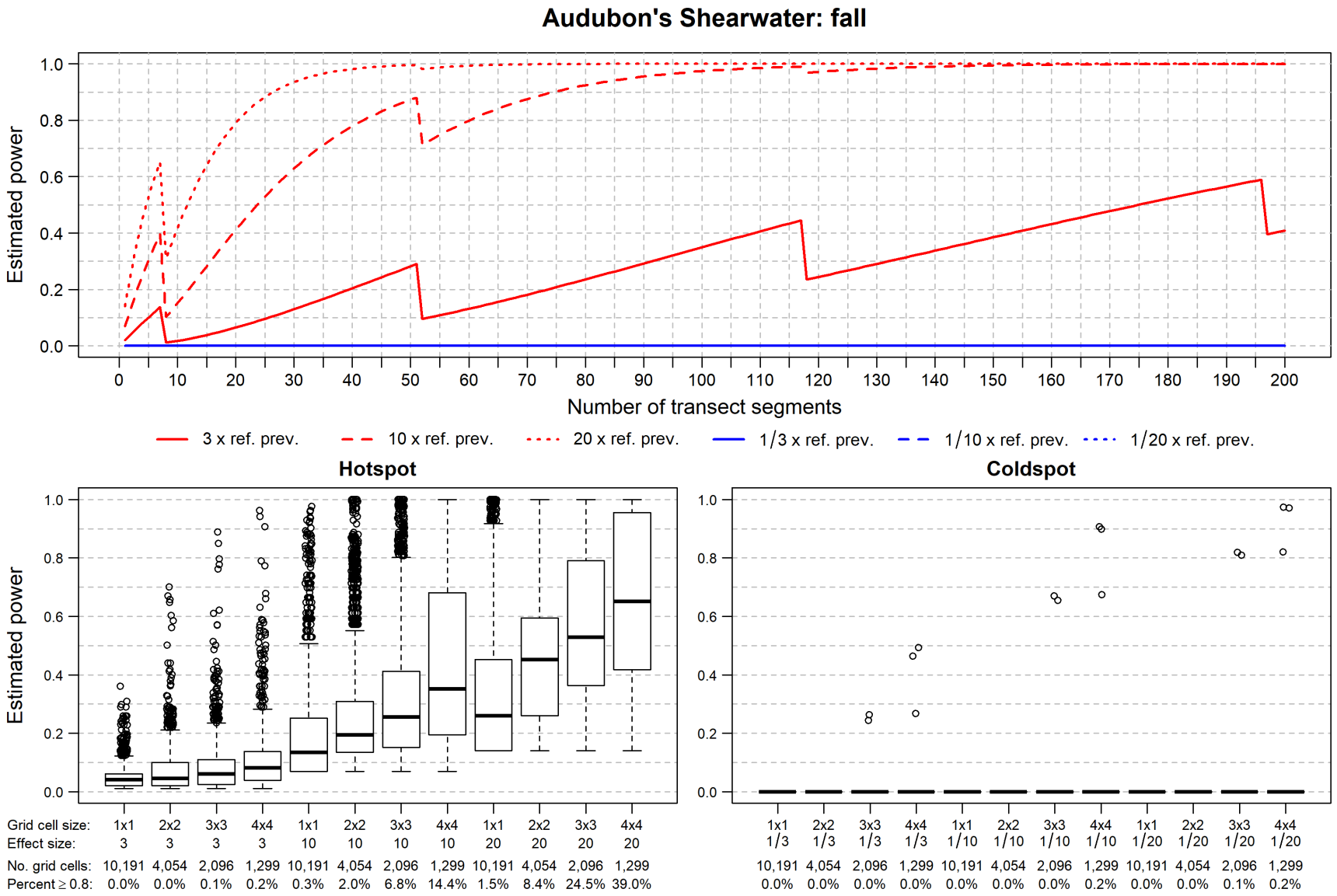

Figure C64. Power analysis results for Audubon's Shearwater during fall based on the occurrence probability model (type I error rate = 0.05)

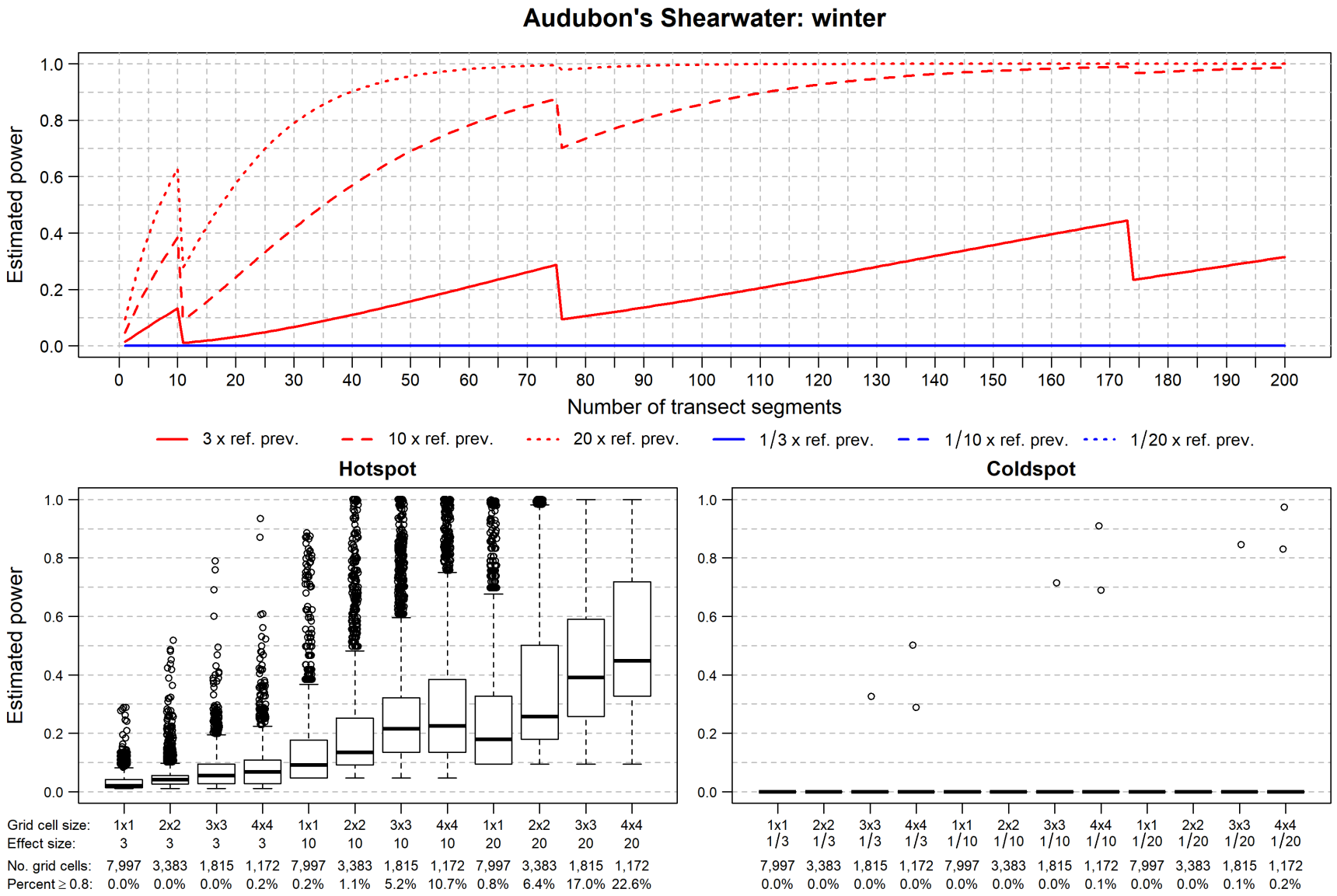

Figure C65. Power analysis results for Audubon's Shearwater during winter based on the occurrence probability model (type I error rate = 0.05)

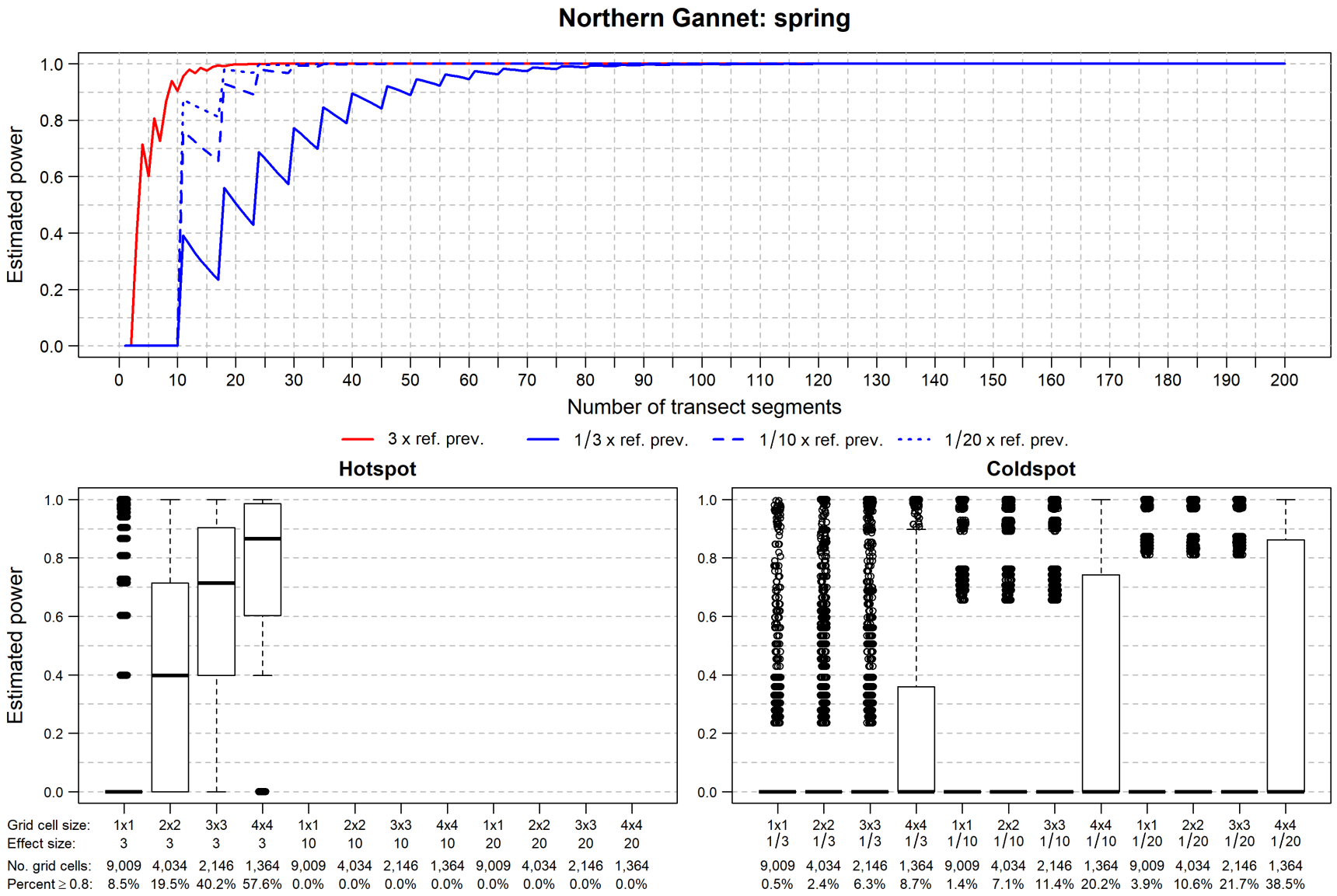

Figure C66. Power analysis results for Northern Gannet during spring based on the occurrence probability model (type I error rate = 0.05)

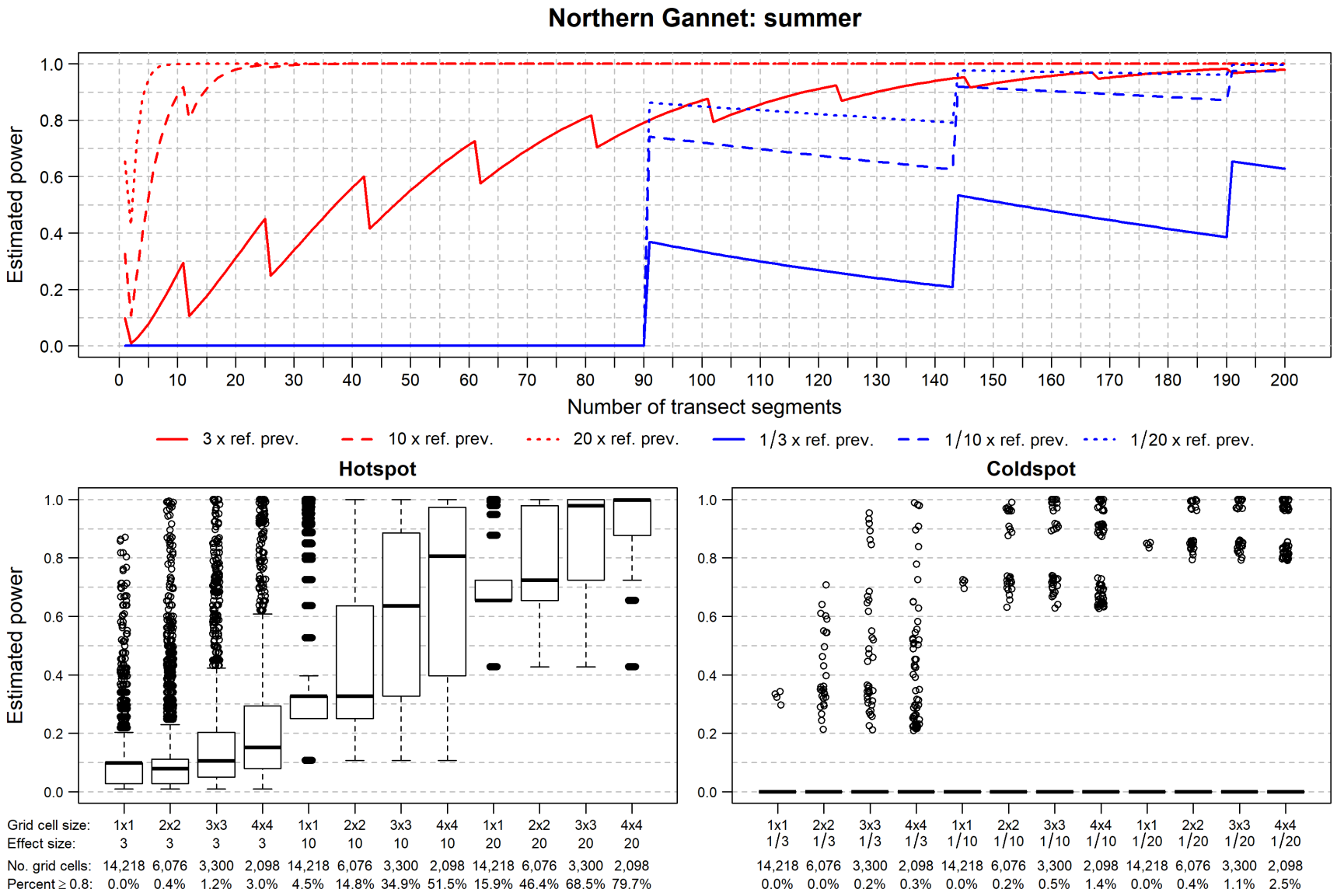

Figure C67. Power analysis results for Northern Gannet during summer based on the occurrence probability model (type I error rate = 0.05)

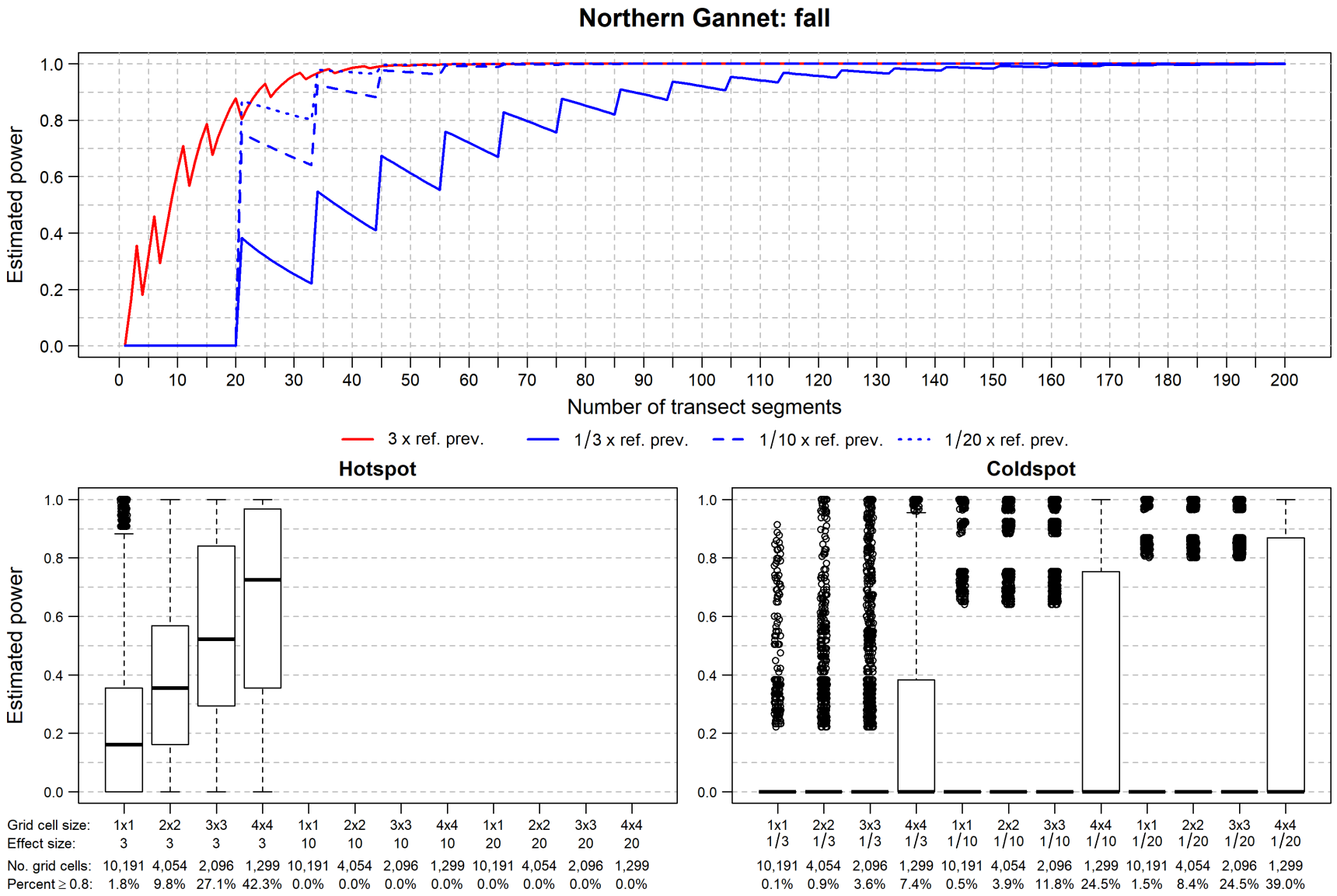

Figure C68. Power analysis results for Northern Gannet during fall based on the occurrence probability model (type I error rate = 0.05)

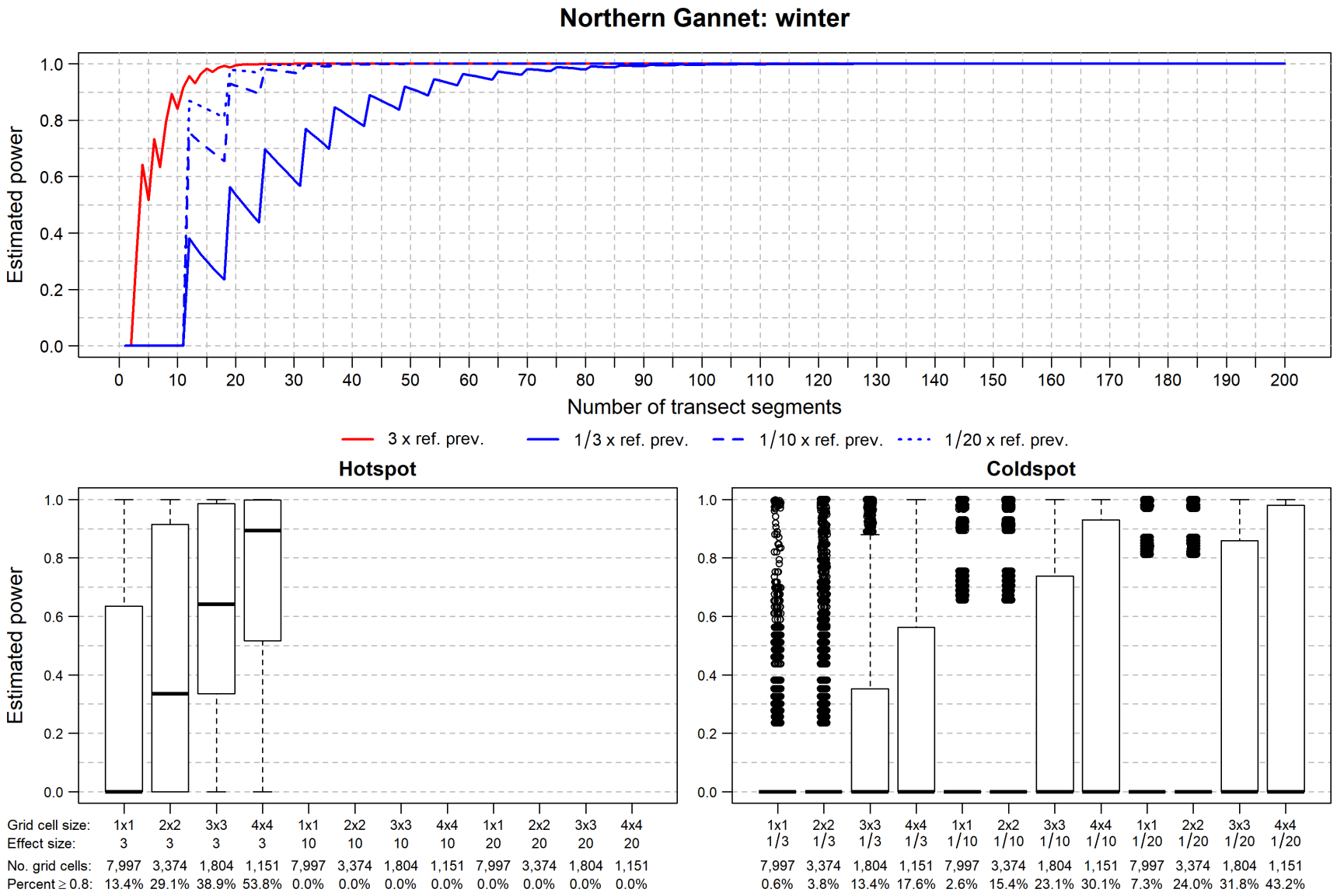

Figure C69. Power analysis results for Northern Gannet during winter based on the occurrence probability model (type I error rate = 0.05)