

Figure B2.1. Map of offshore strata sampled in the NEFSC spring, autumn, and winter surveys.

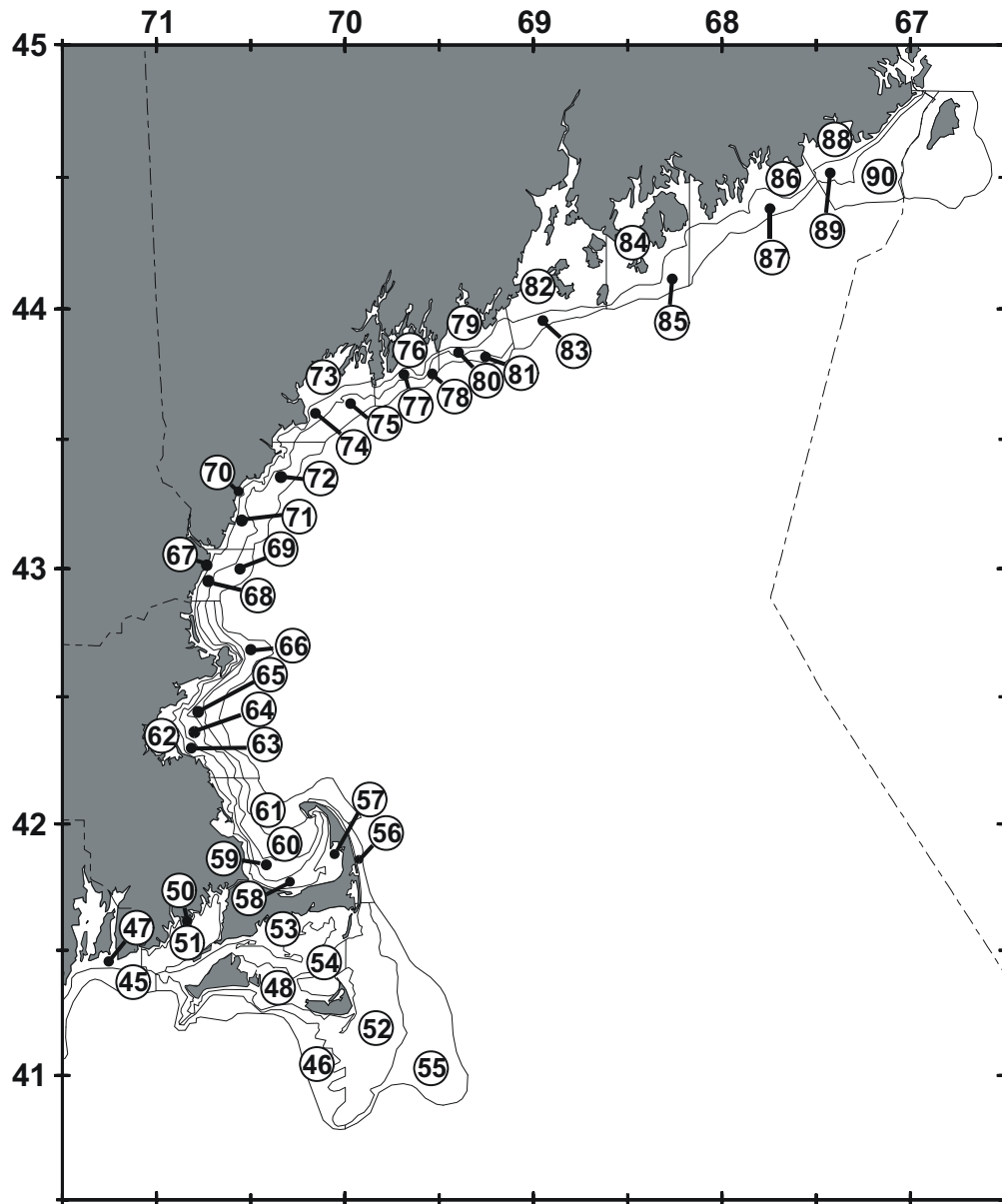


Figure B2.2. Map of inshore strata sampled in the NEFSC spring and autumn surveys in the Gulf of Maine.

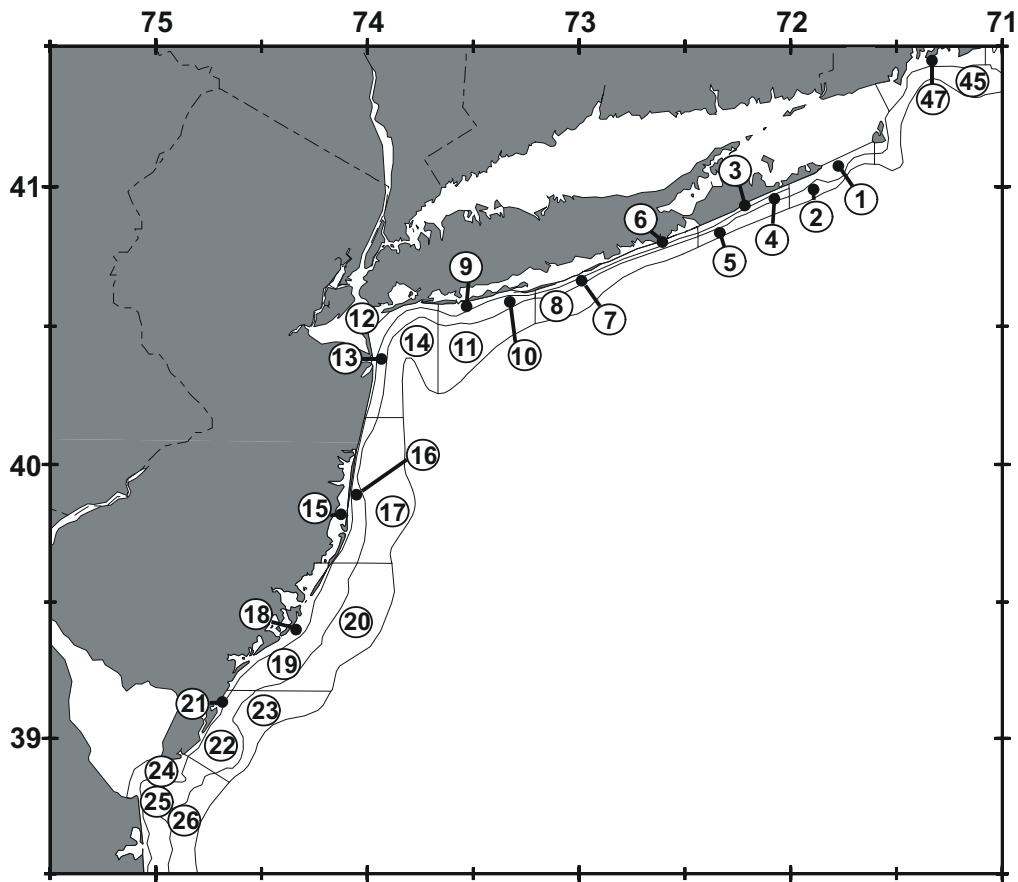


Figure B2.3. Map of inshore strata sampled in the NEFSC spring and autumn surveys in Southern New England.

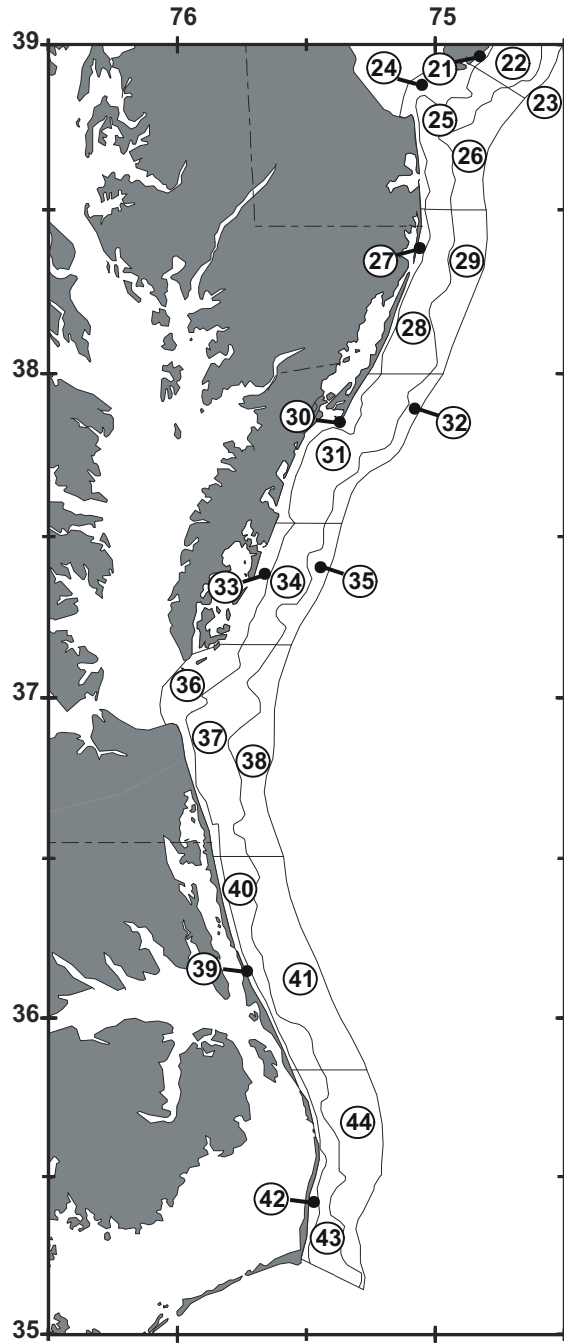


Figure B2.4. Map of inshore strata sampled in the NEFSC spring and autumn surveys in the Mid-Atlantic.

## Skates Spring Survey Species Composition

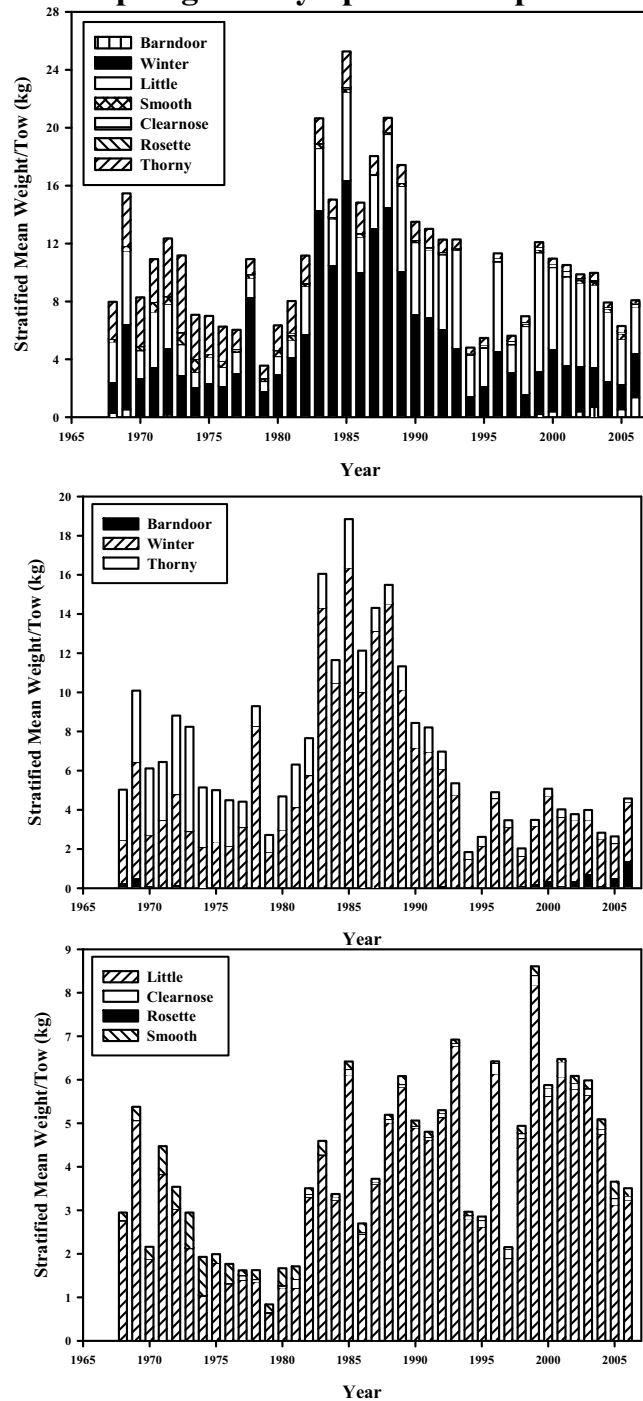
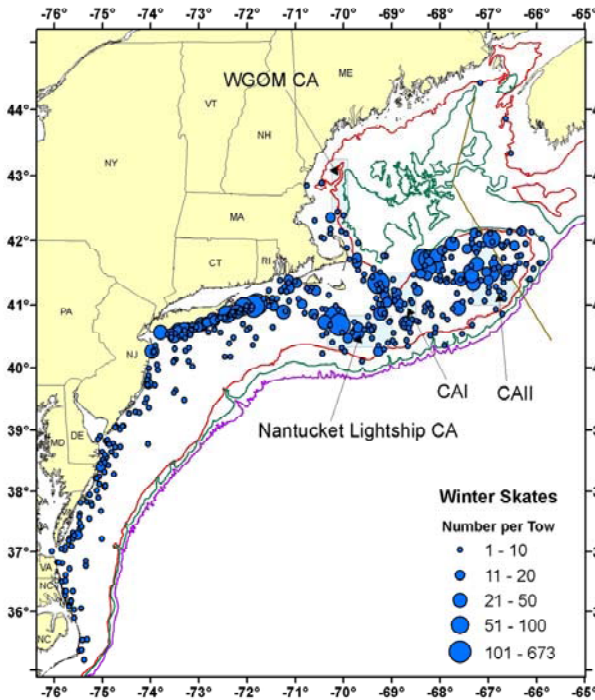
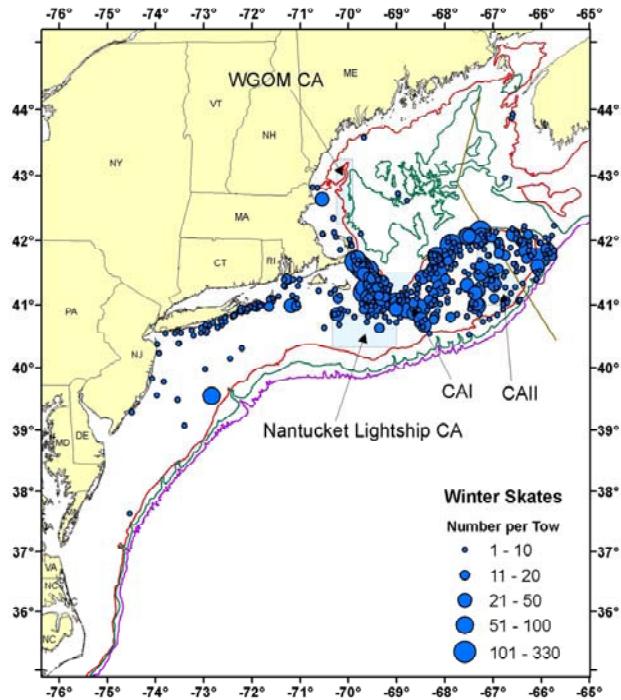


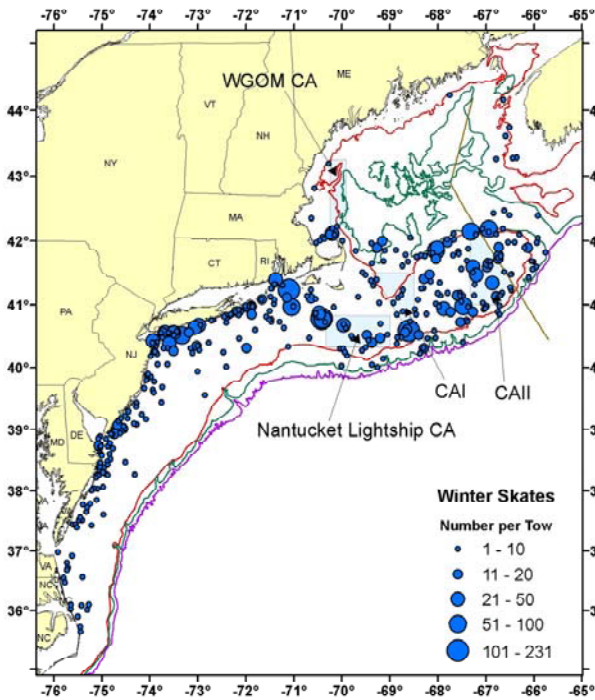
Figure B2.5. Species composition of skates from the spring survey. Panel A shows the composition of all species, panel B shows the composition of large species (>100 cm maximum length), and panel C shows the composition of the small species (maximum length < 100cm).



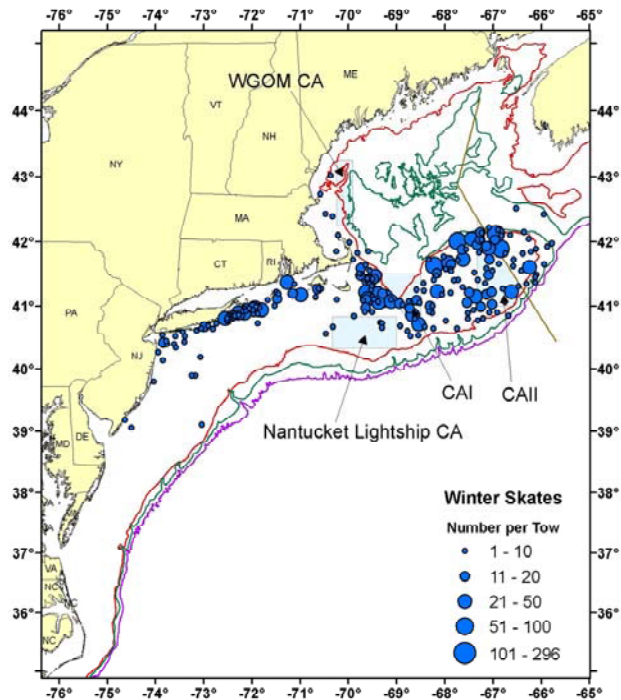
Winter Skates from 1998-2002 NEFSC Spring Surveys



Winter Skates from 1998-2002 NEFSC Fall Surveys

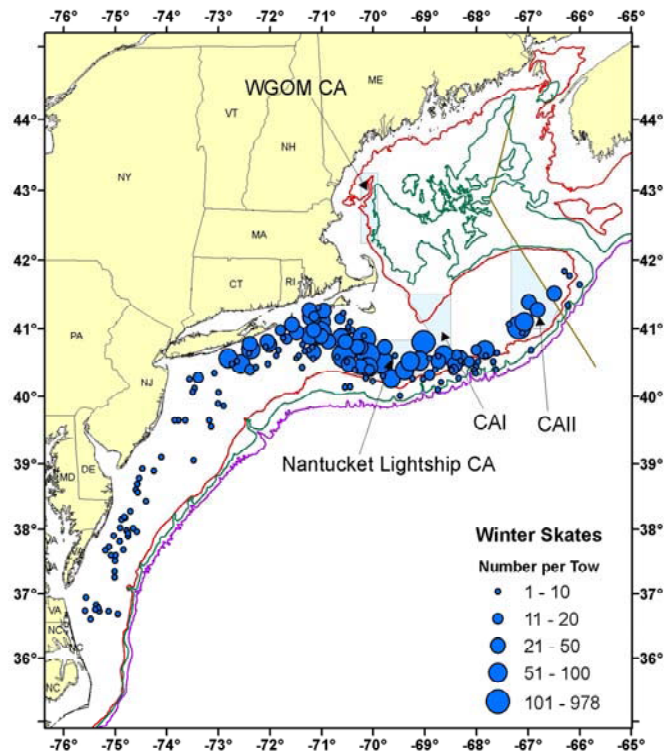


Winter Skates from 2003-2006 NEFSC Spring Surveys

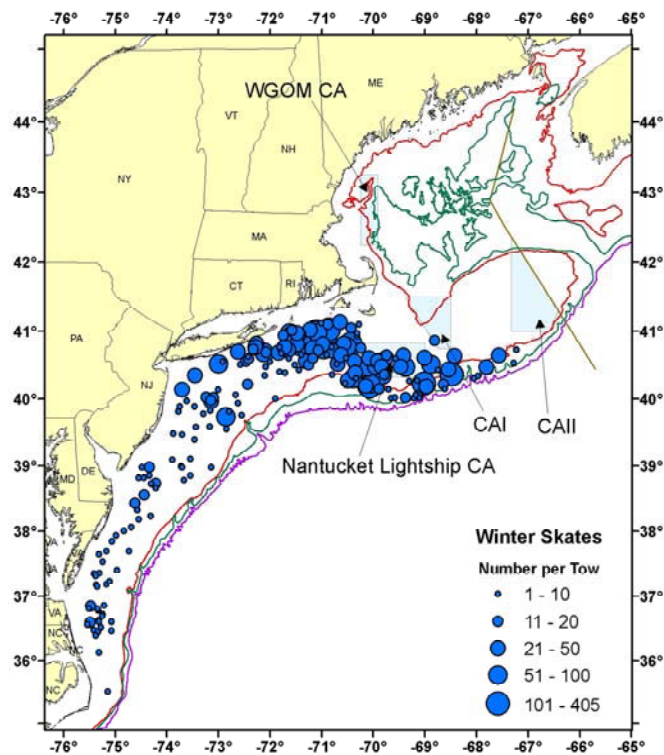


Winter Skates from 2003-2005 NEFSC Fall Surveys

Figure B2.6. Distribution of winter skate from the spring and autumn NEFSC surveys from 1998-2006.

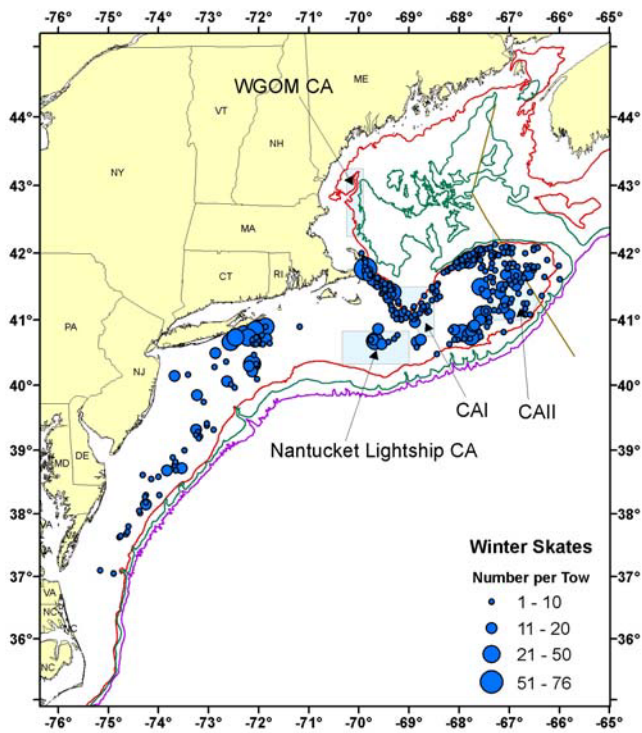


Winter Skates from 2000-2002 NEFSC Winter Surveys

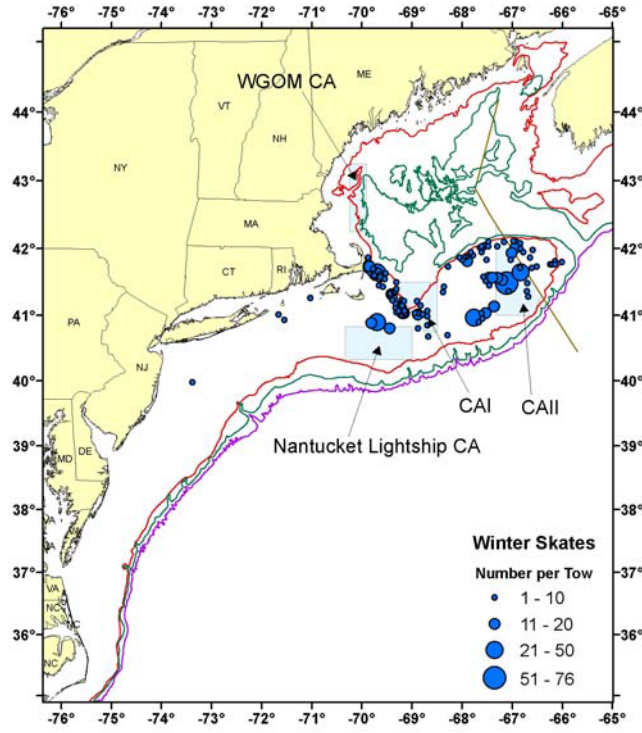


Winter Skates from 2003-2006 NEFSC Winter Surveys

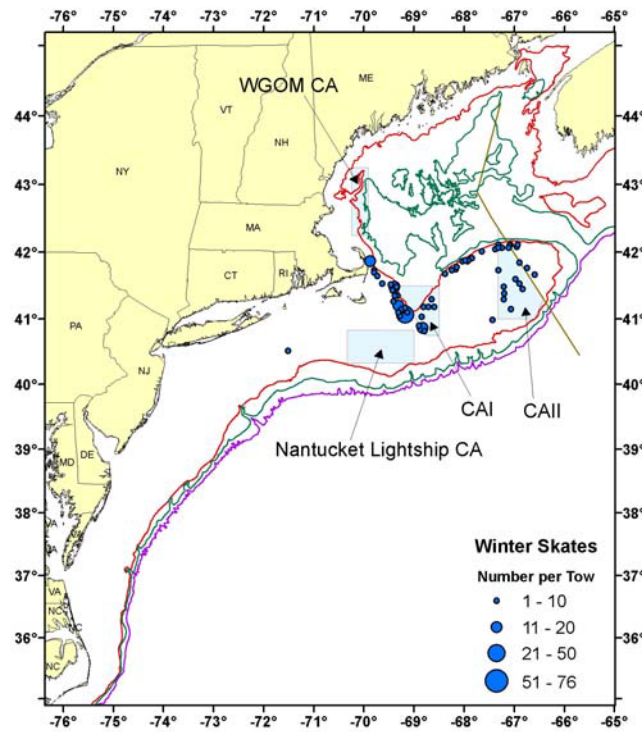
Figure B2.7. Distribution of winter skate from the NEFSC winter surveys from 2000-2006.



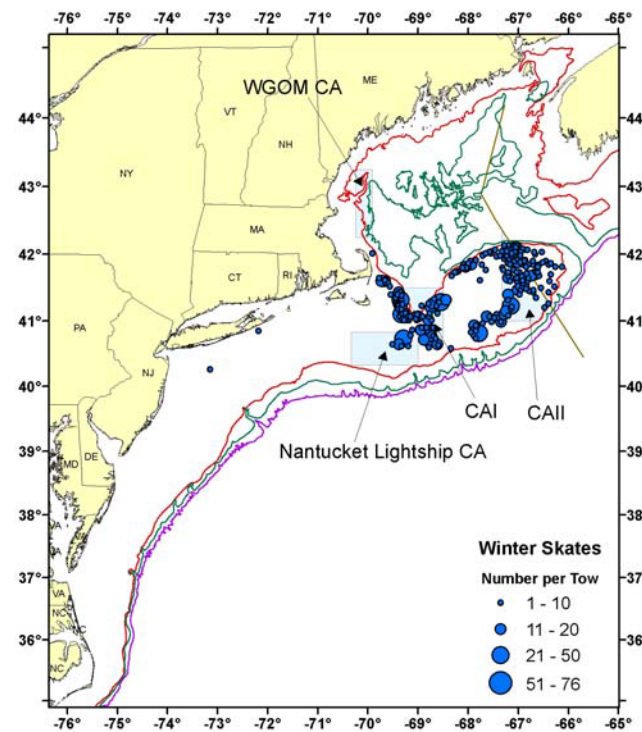
Winter Skates from 1985-1987 NEFSC Scallop Surveys



Winter Skates from 1988-1990 NEFSC Scallop Surveys



Winter Skates from 1991-1993 NEFSC Scallop Surveys



Winter Skates from 1994-1996 NEFSC Scallop Surveys

Figure B2.8. Distribution of winter skate from the NEFSC scallop surveys from 1985-1996.



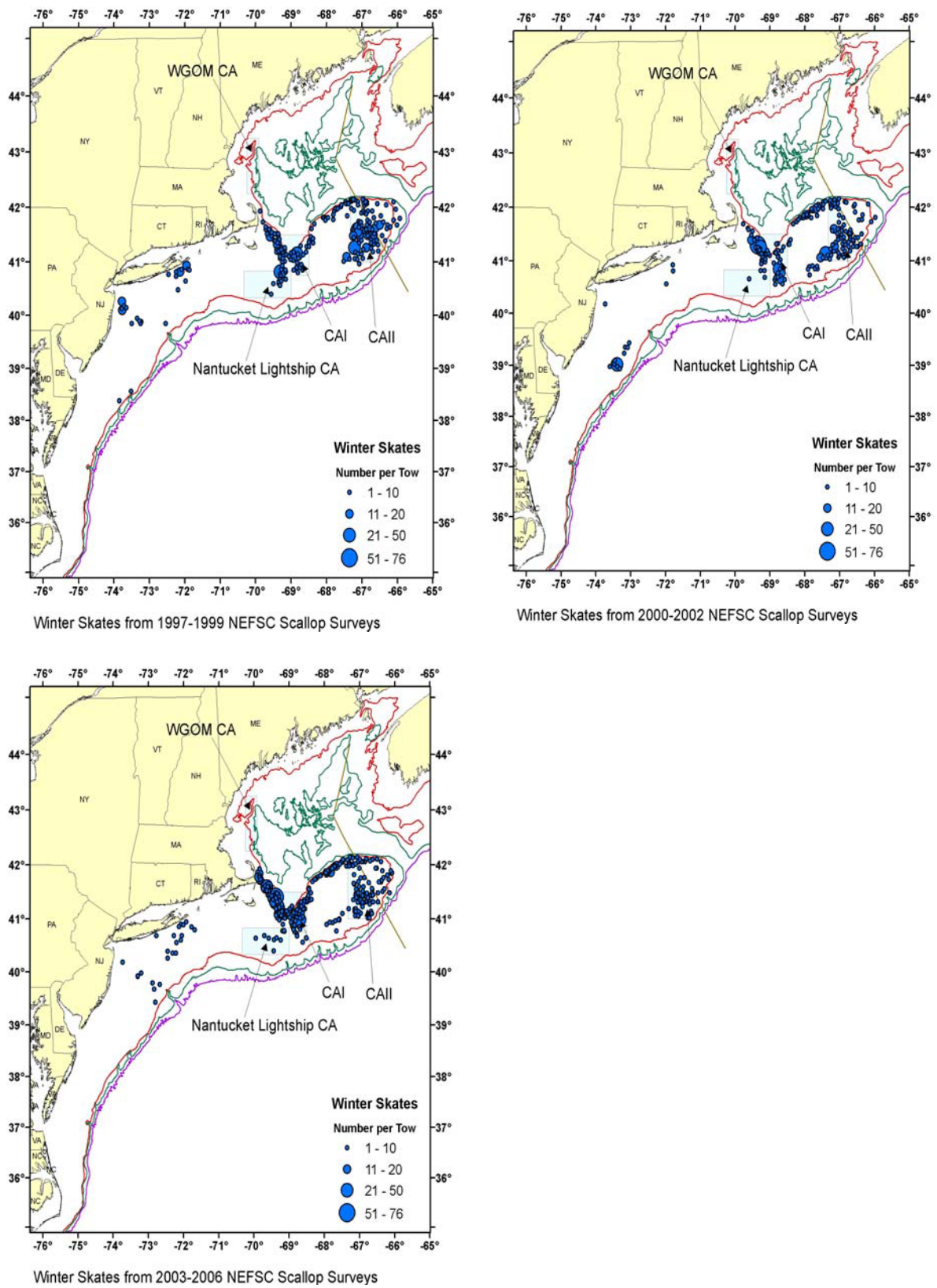


Figure B2.9. Distribution of winter skate from the NEFSC scallop surveys from 1997-2006.

## Winter Skate GOM-MA Offshore Only

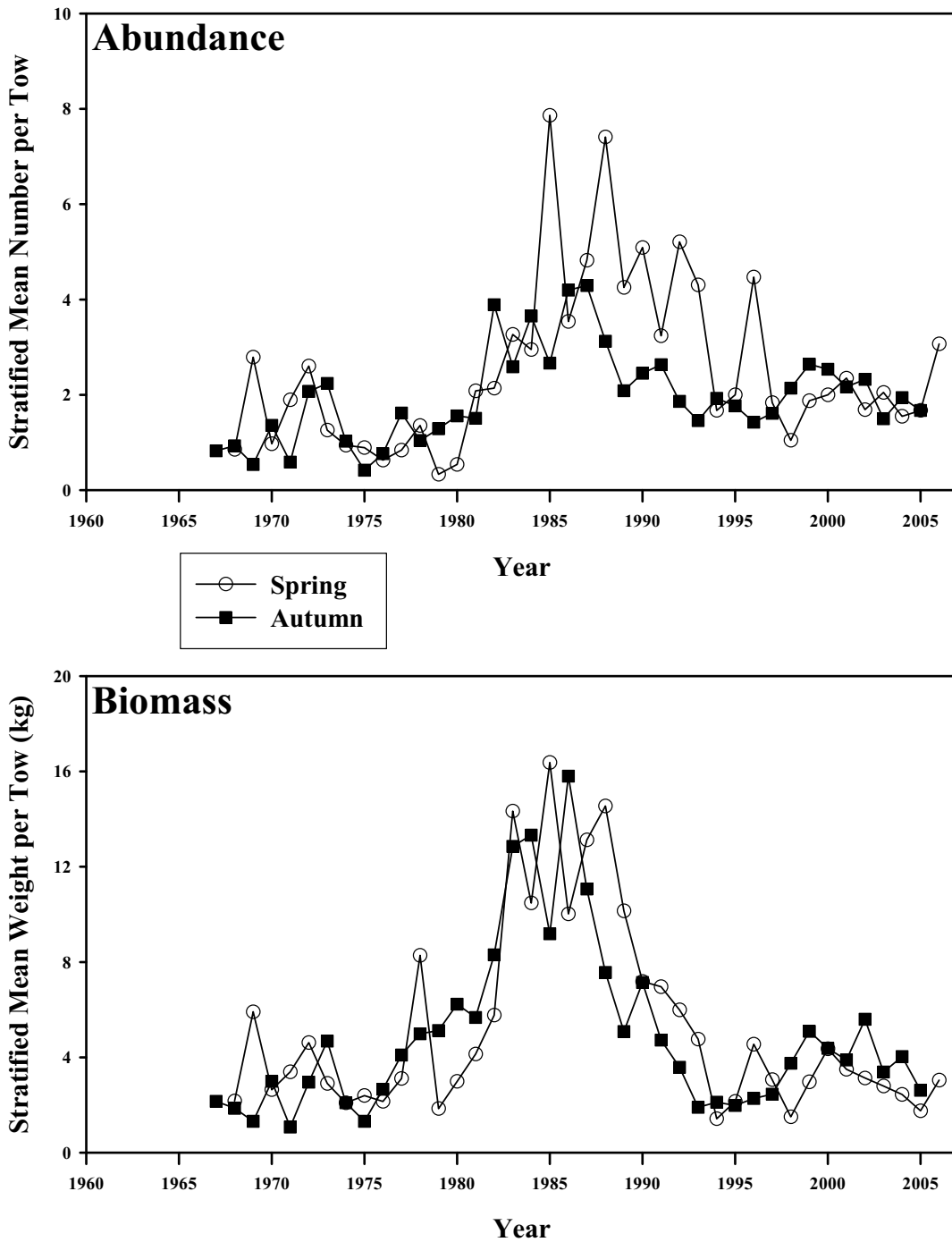


Figure B2.10. Abundance and biomass of winter skate from the NESFC spring (circles) and autumn (squares) bottom trawl surveys from 1967-2006 in the Gulf of Maine to Mid-Atlantic offshore region.

## Winter Skate GOM-MA Offshore Only - Spring Survey

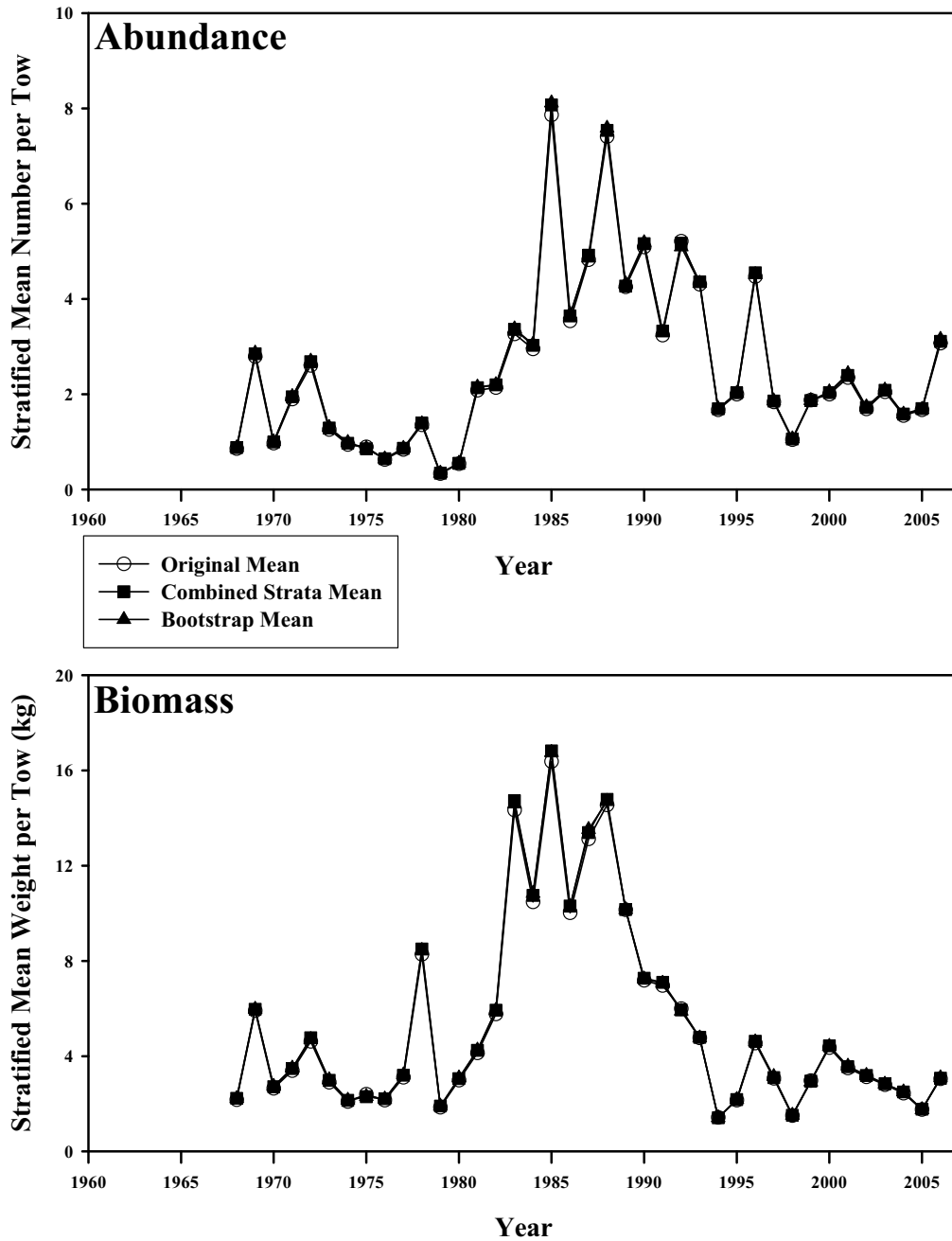


Figure B2.11. Abundance and biomass of winter skate from the NESFC spring bottom trawl surveys from 1968-2006 in the Gulf of Maine to Mid-Atlantic offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Winter Skate - Spring Survey GOM-MA Offshore Only

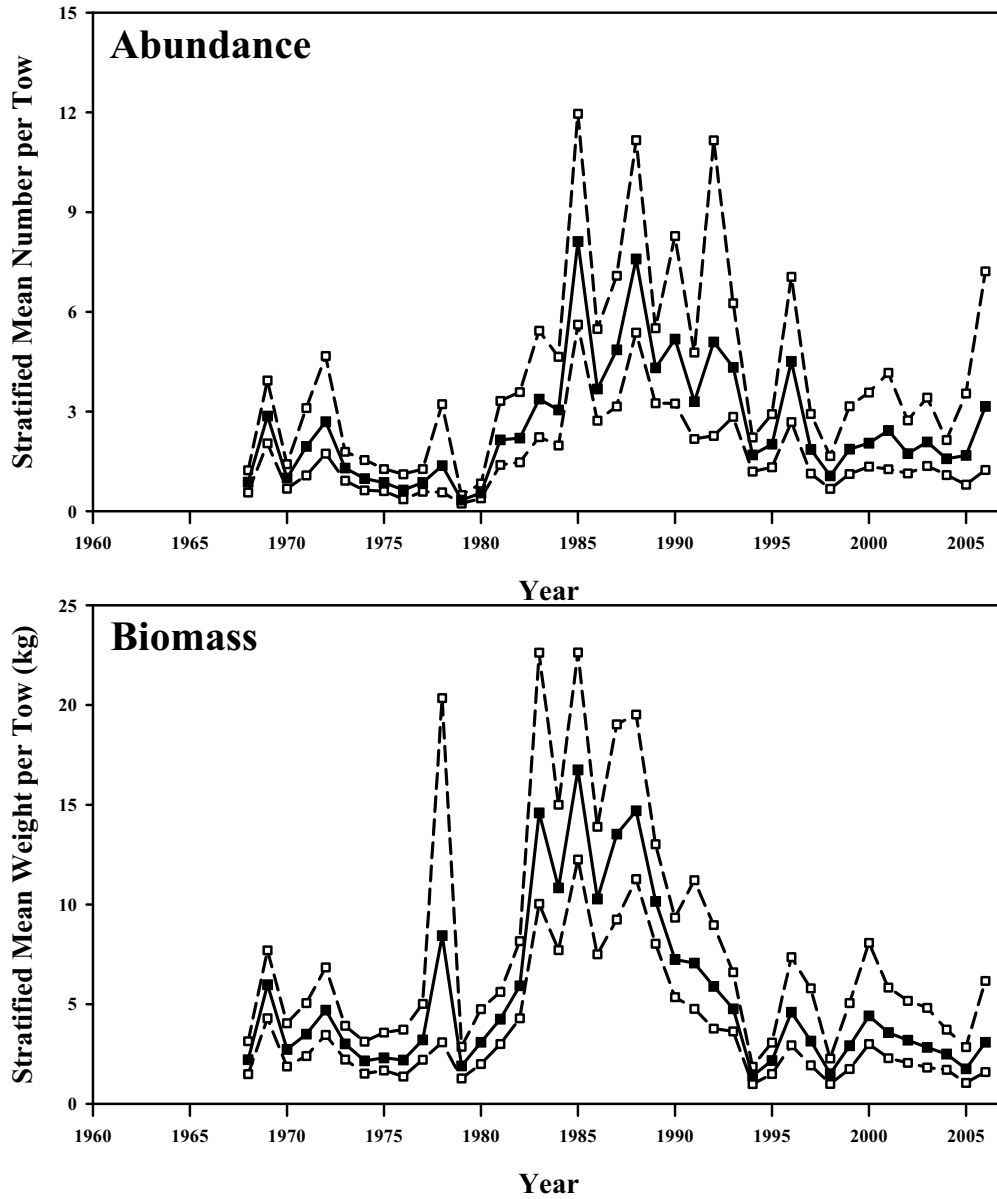


Figure B2.12. Bootstrapped abundance and biomass of winter skate from the NESFC spring bottom trawl survey in the Gulf of Maine to Mid-Atlantic region, offshore strata only. Mean index in solid squares, 95% confidence interval in open squares.

## Winter Skate GOM-MA Offshore Only - Autumn Survey

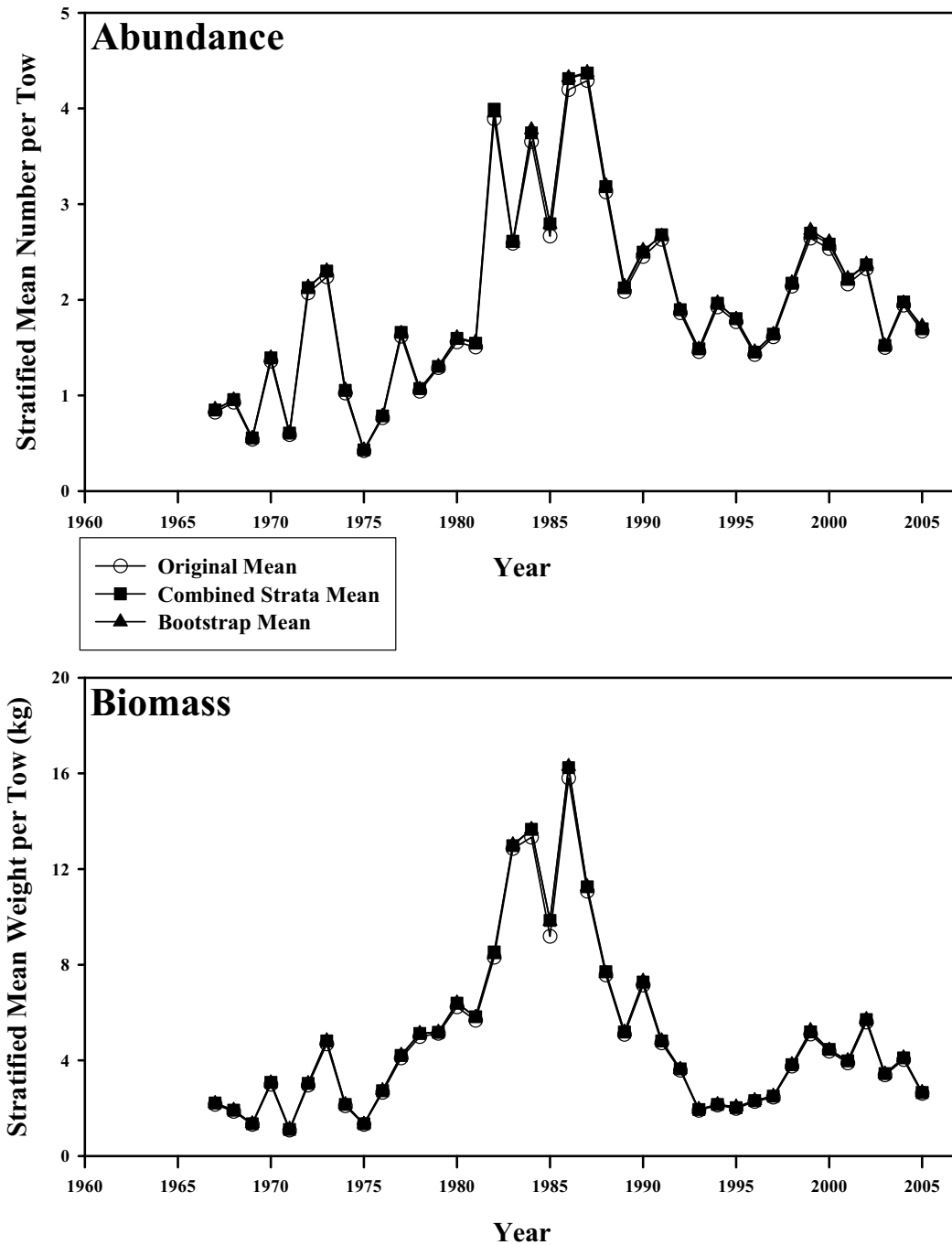


Figure B2.13. Abundance and biomass of winter skate from the NESFC autumn bottom trawl surveys from 1967-2005 in the Gulf of Maine to Mid-Atlantic offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Winter Skate - Autumn Survey GOM-MA Offshore Only

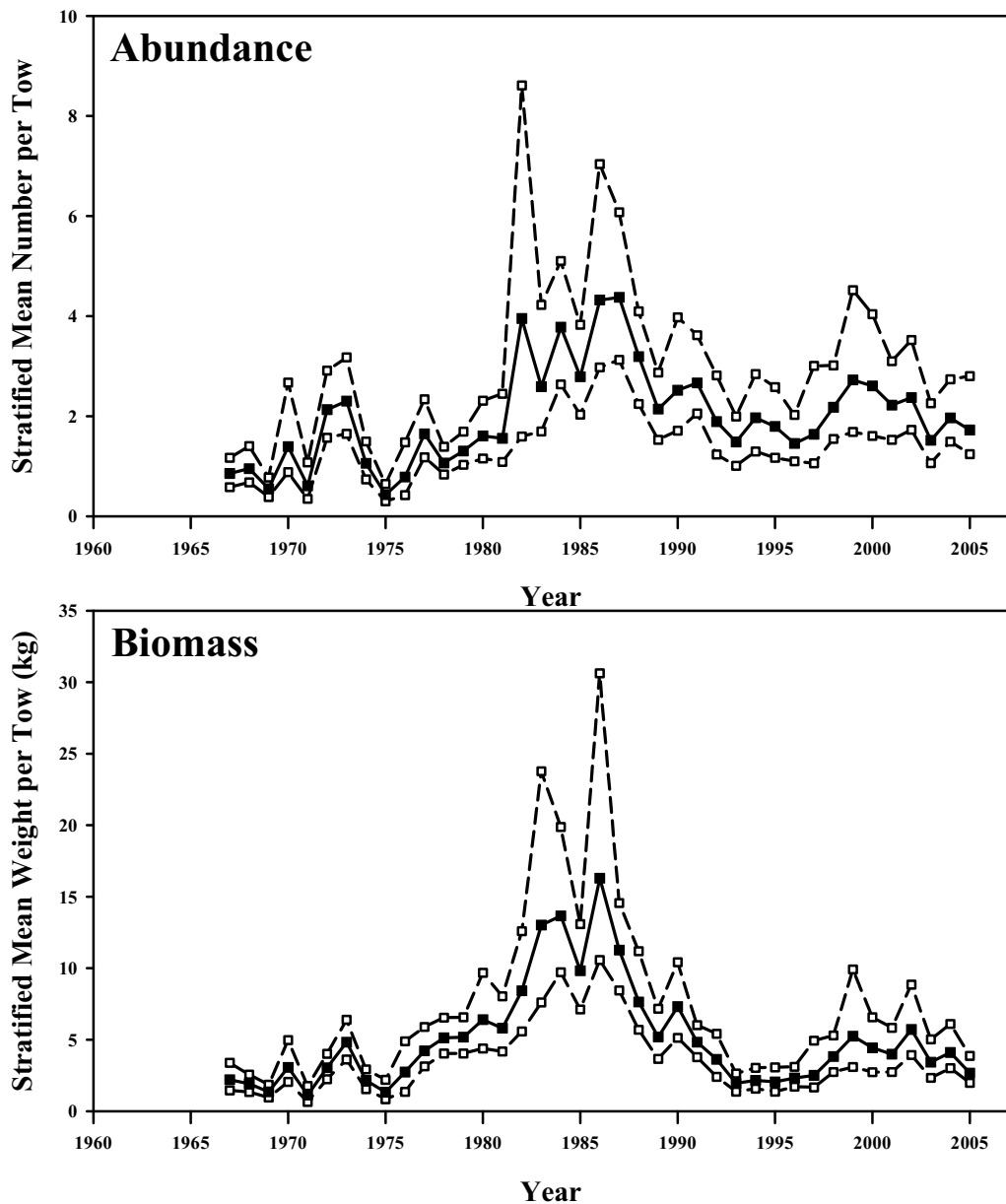


Figure B2.14. Bootstrapped abundance and biomass of winter skate from the NESFC autumn bottom trawl survey in the Gulf of Maine to Mid-Atlantic region, offshore strata only. Mean index in solid squares, 95% confidence interval in open squares.

# Winter Skate Percentiles of Length Composition

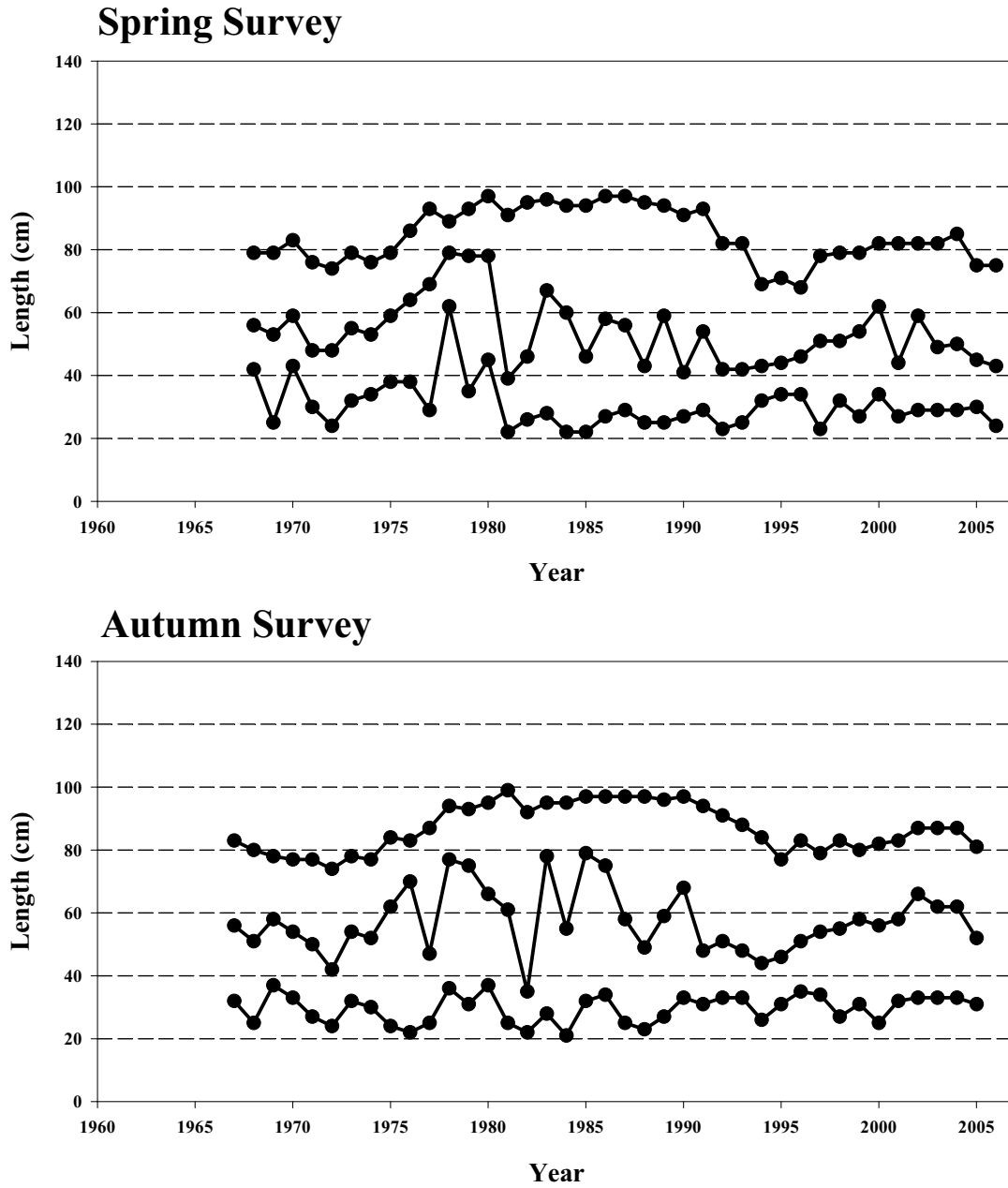


Figure B2.15. Percentiles of length composition (5, 50, and 95) of winter skate from the NESFC spring and autumn bottom trawl surveys from 1967-2006 in the Gulf of Maine to Mid-Atlantic offshore region.

Spring Survey

Autumn Survey

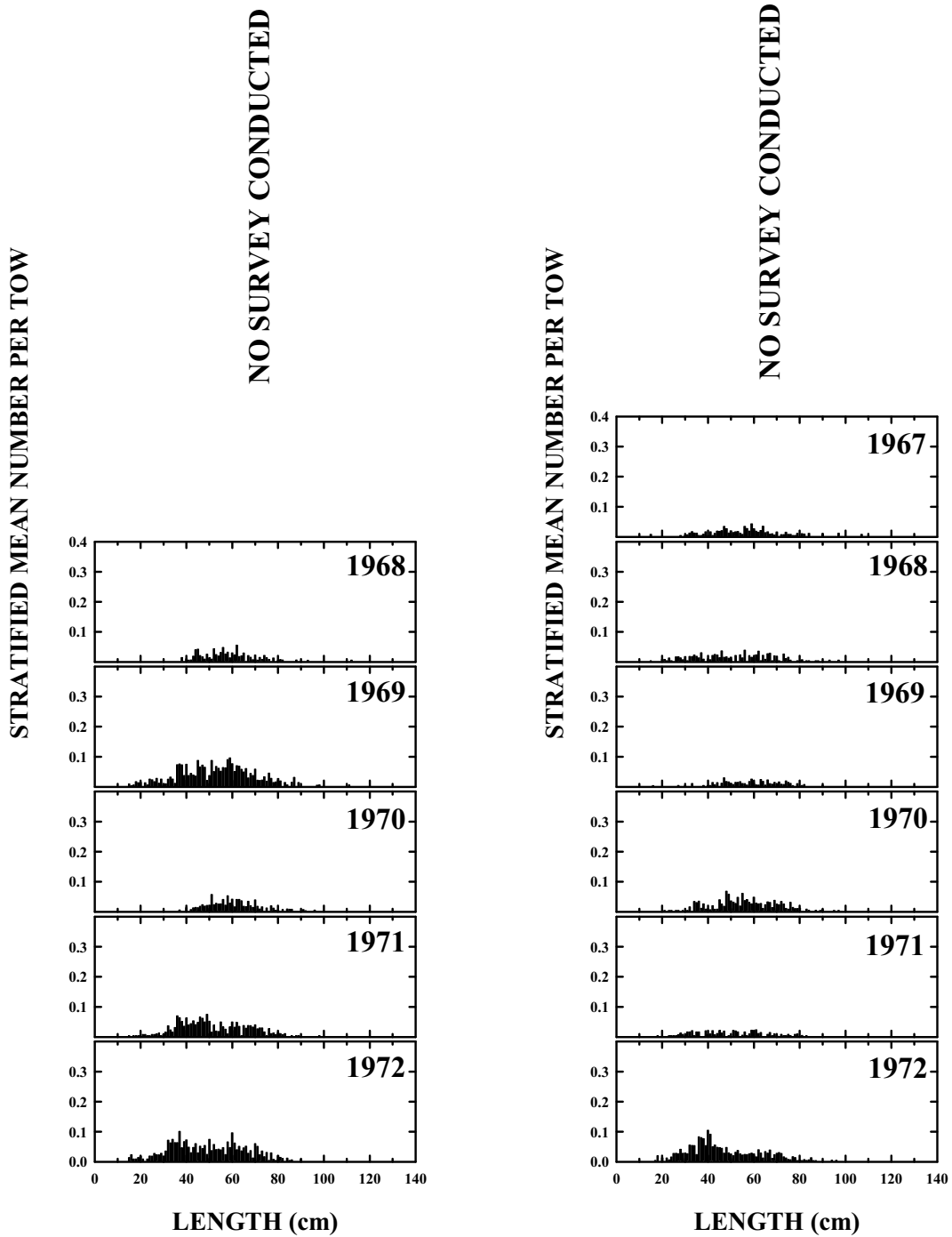


Figure B2.16. Winter skate length composition from the NEFSC spring and autumn trawl surveys in the Gulf of Maine to Mid-Atlantic offshore regions, 1967-1972.



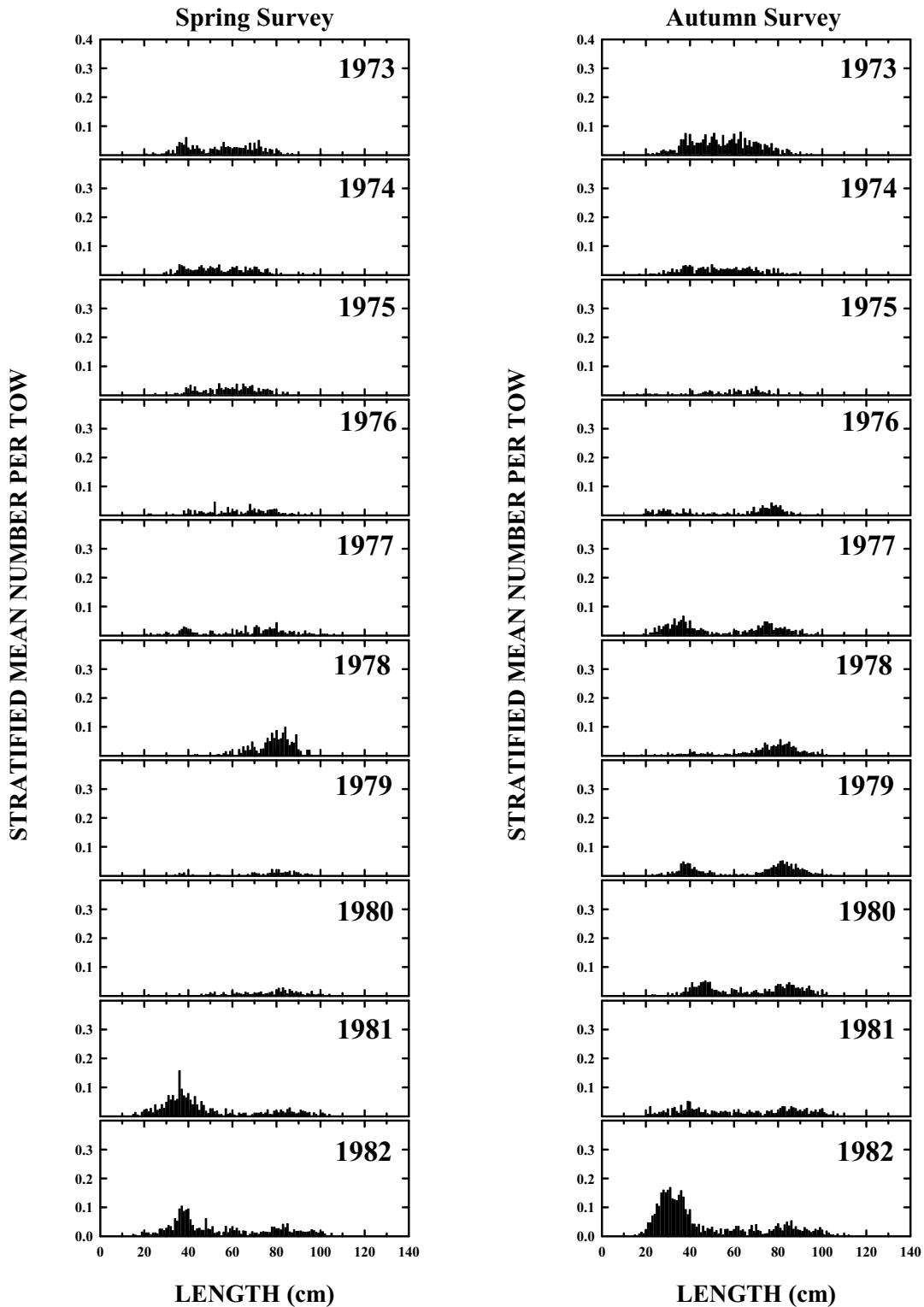


Figure B2.17. Winter skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Mid-Atlantic offshore regions, 1973-1982.

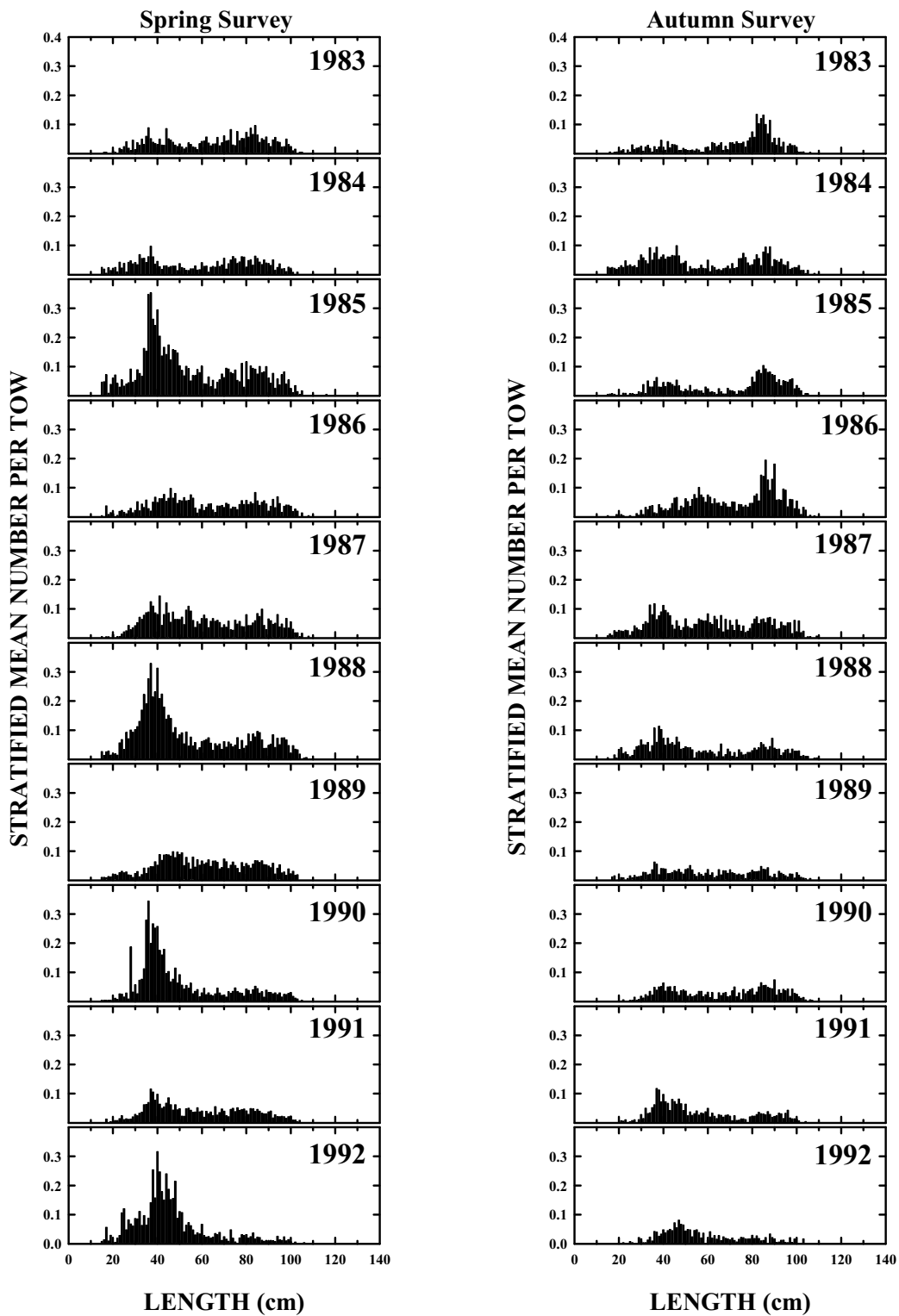


Figure B2.18. Winter skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Mid-Atlantic offshore regions, 1983-1992.

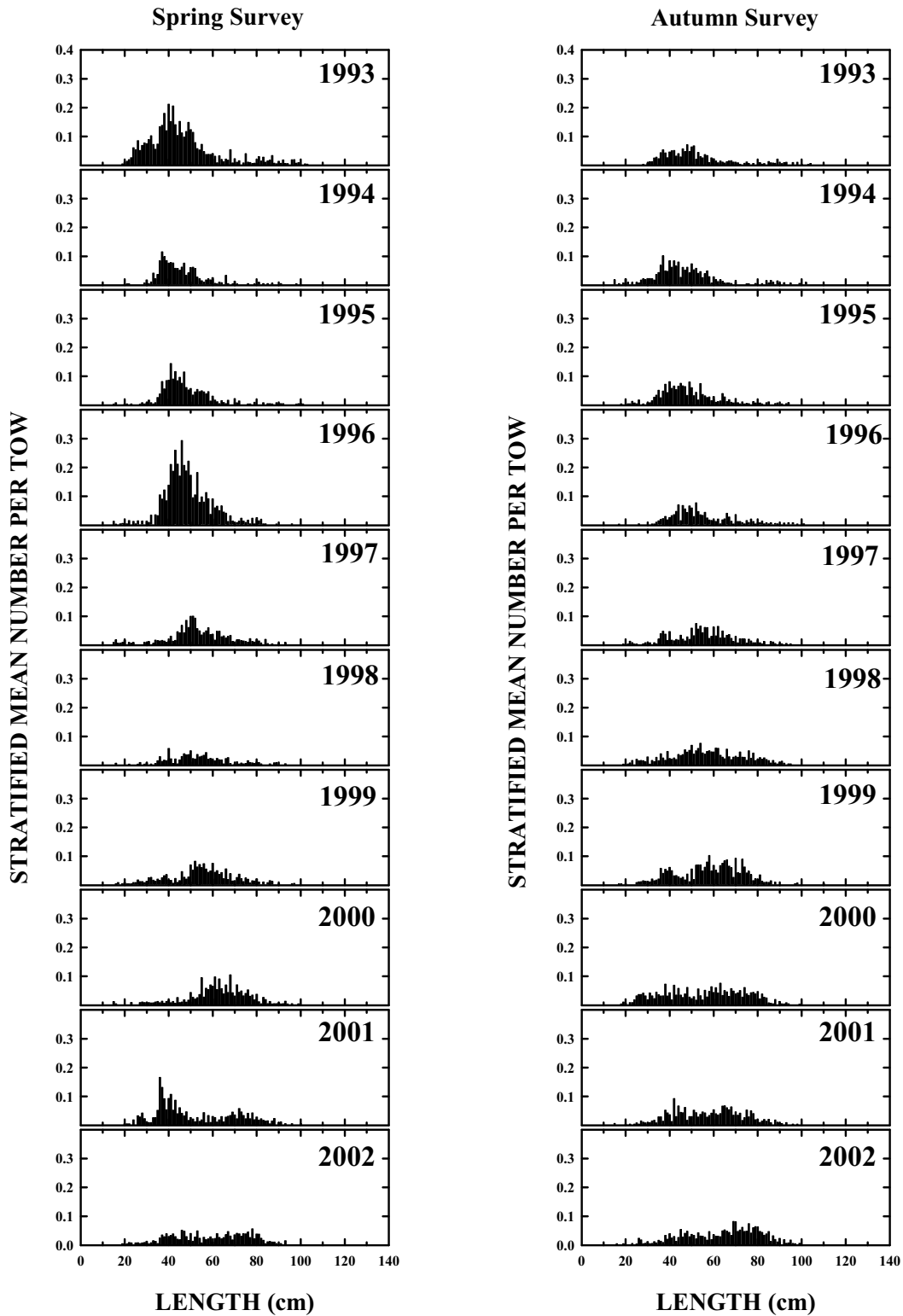


Figure B2.19. Winter skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Mid-Atlantic offshore regions, 1993-2002.

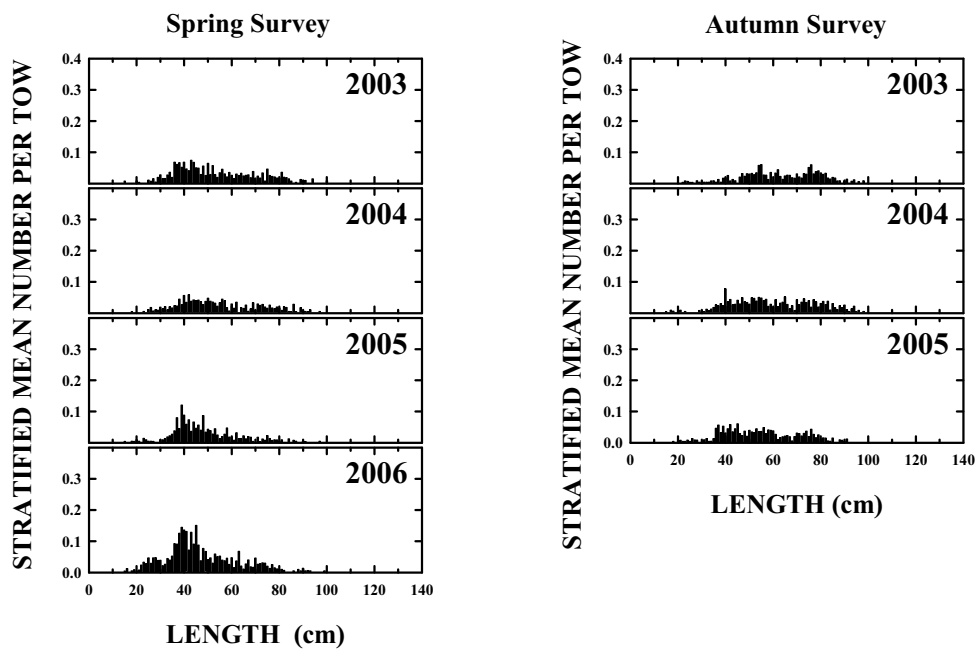


Figure B2.20. Winter skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Mid-Atlantic offshore regions, 2003-2006.

## Winter Skate Winter Survey

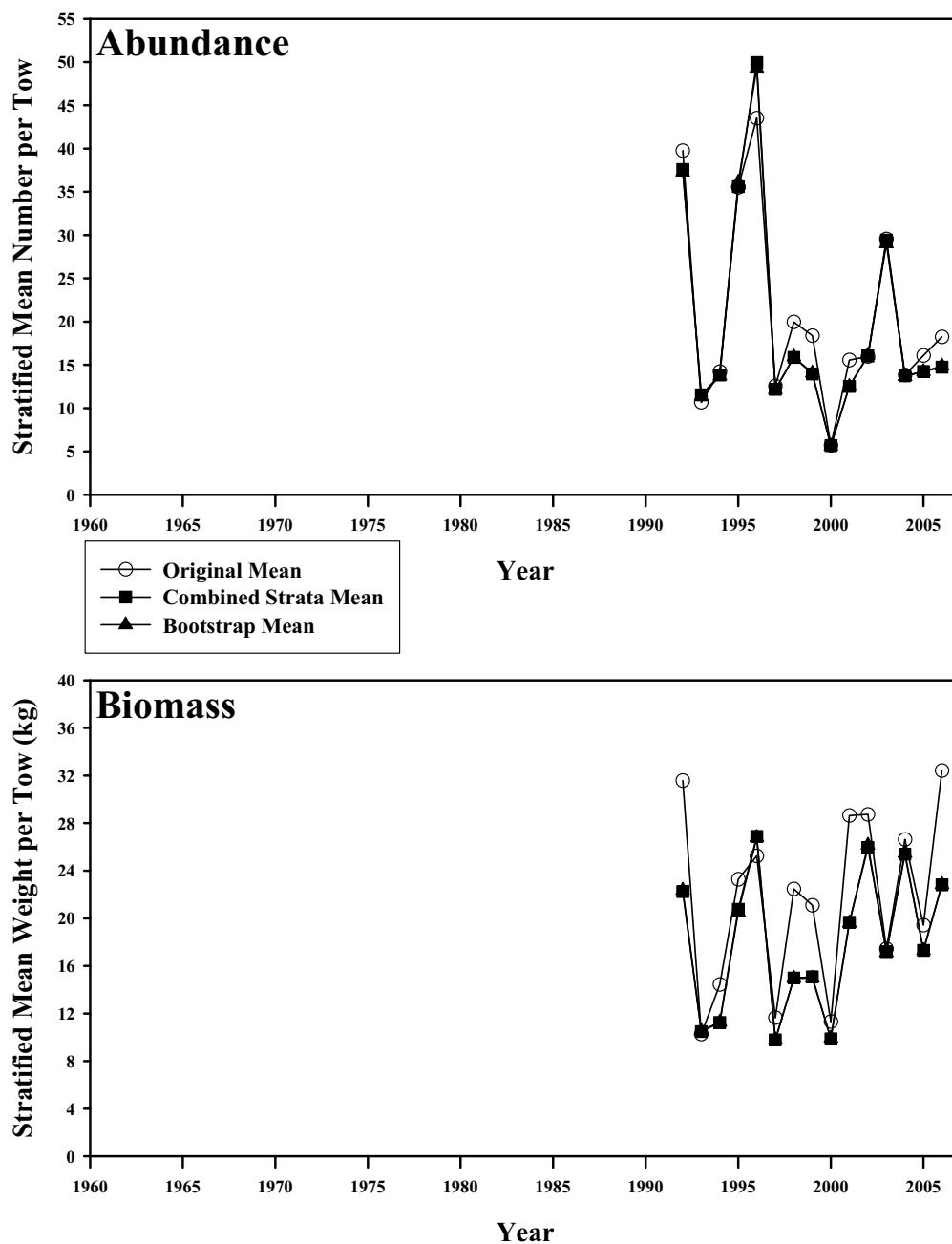


Figure B2.21. Abundance and biomass of winter skate from the NESFC winter bottom trawl surveys from 1992-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Winter Skate Winter Survey

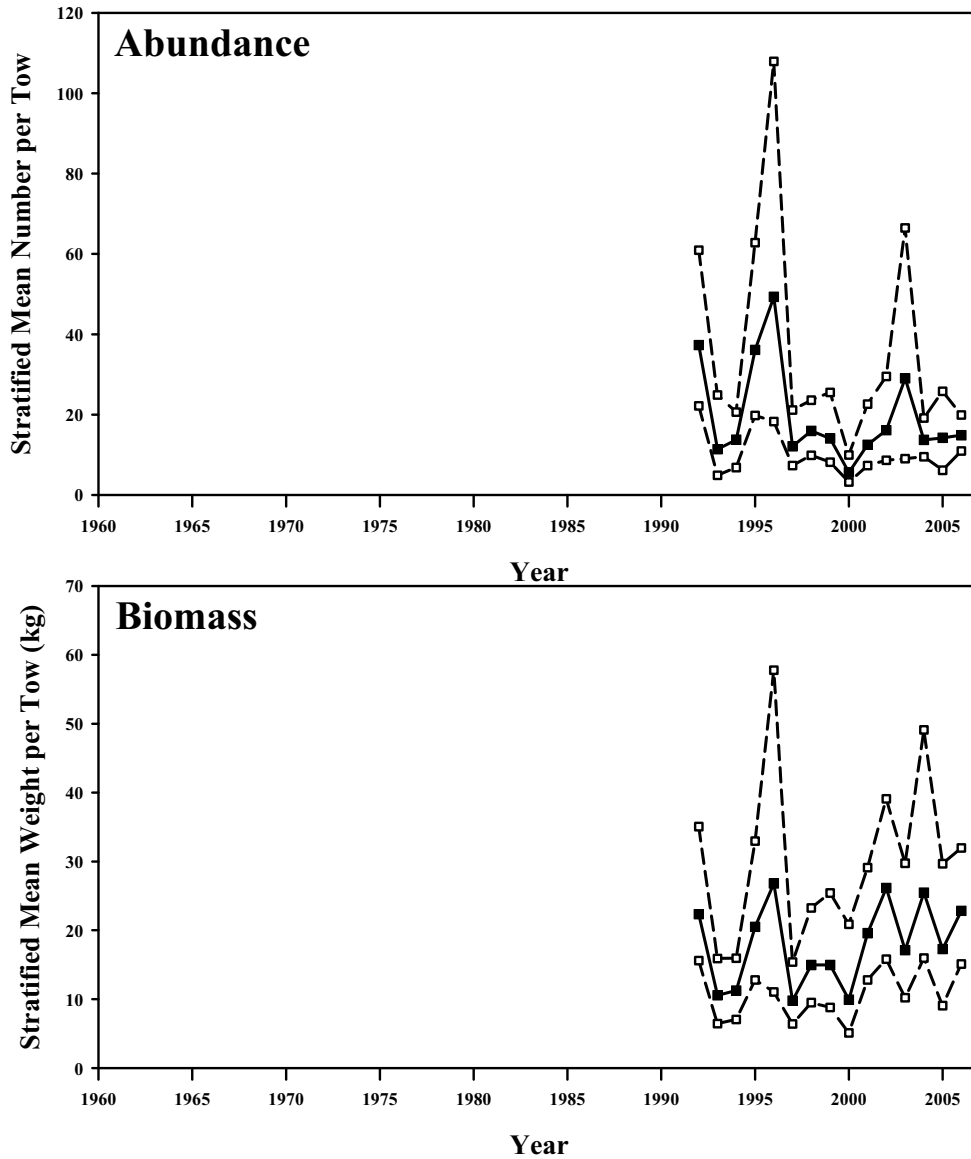


Figure B2.22. Bootstrapped abundance and biomass of winter skate from the NESFC winter bottom trawl survey. Mean index in solid squares, 95% confidence interval in open squares.

## Winter Skate Scallop Survey

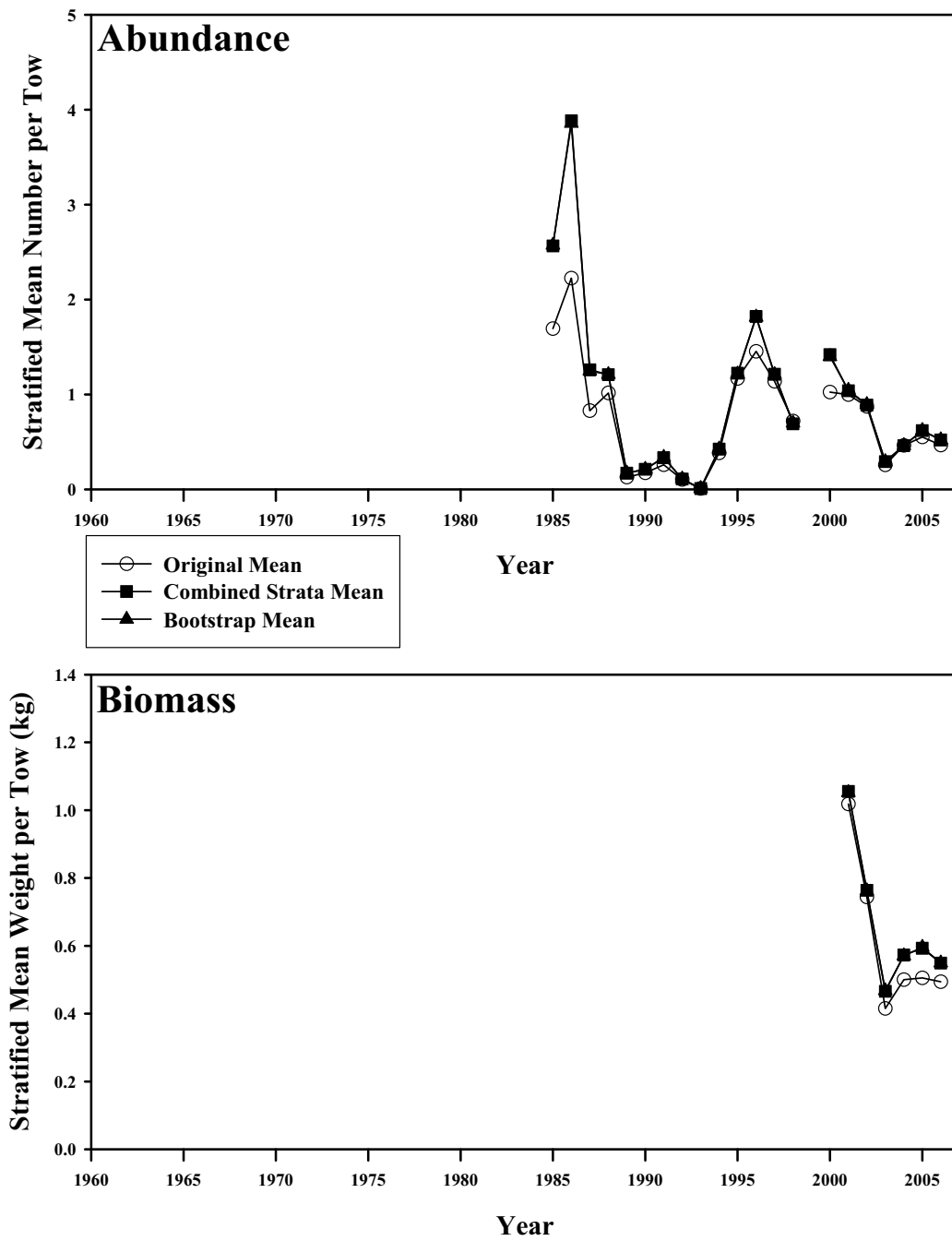


Figure B2.23. Abundance and biomass of winter skate from the NESFC scallop surveys from 1985-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Winter Skate Scallop Survey

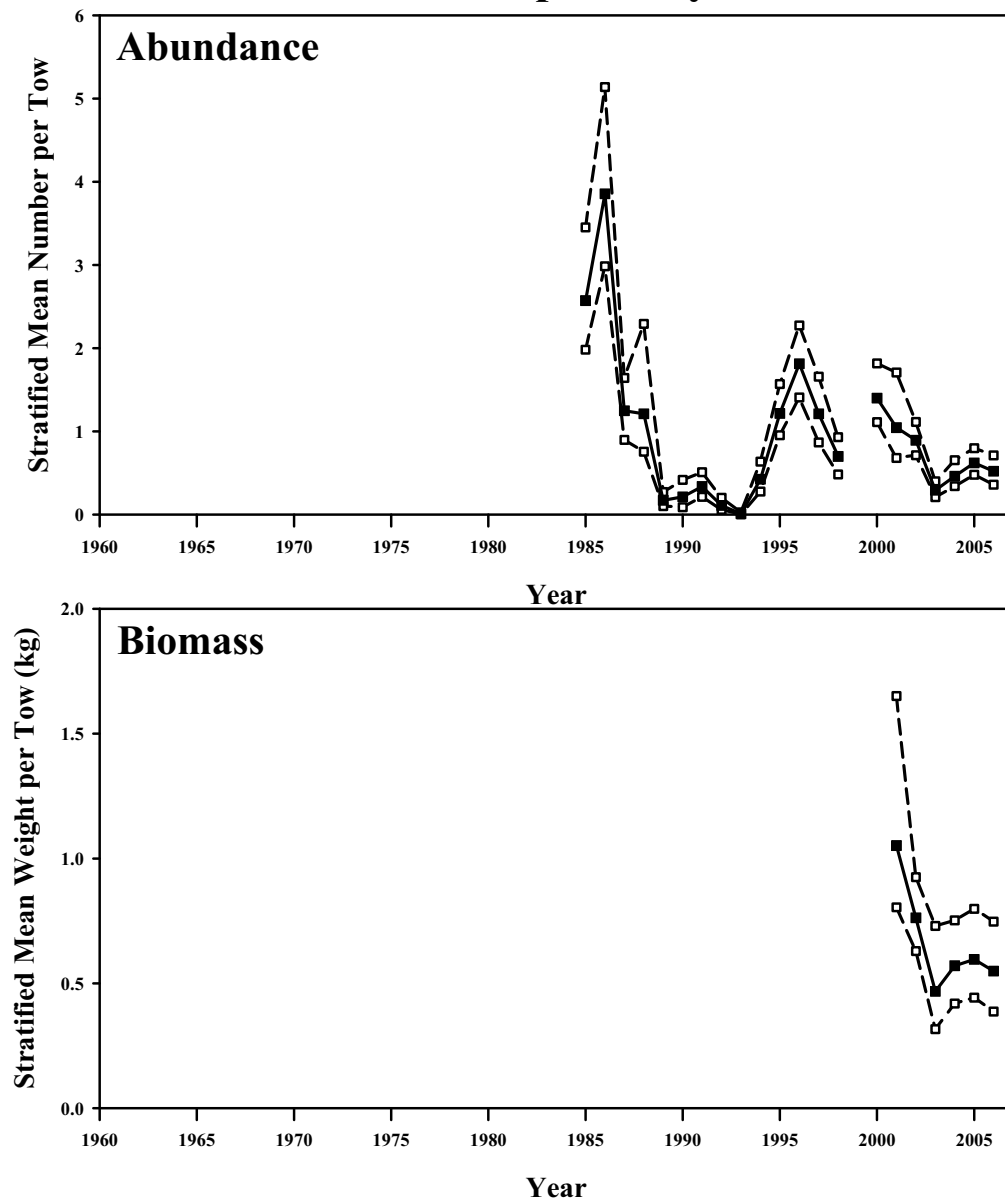


Figure B2.24. Bootstrapped abundance and biomass of winter skate from the NESFC scallop survey. Mean index in solid squares, 95% confidence interval in open squares.



## Winter Skate - Massachusetts Trawl Survey

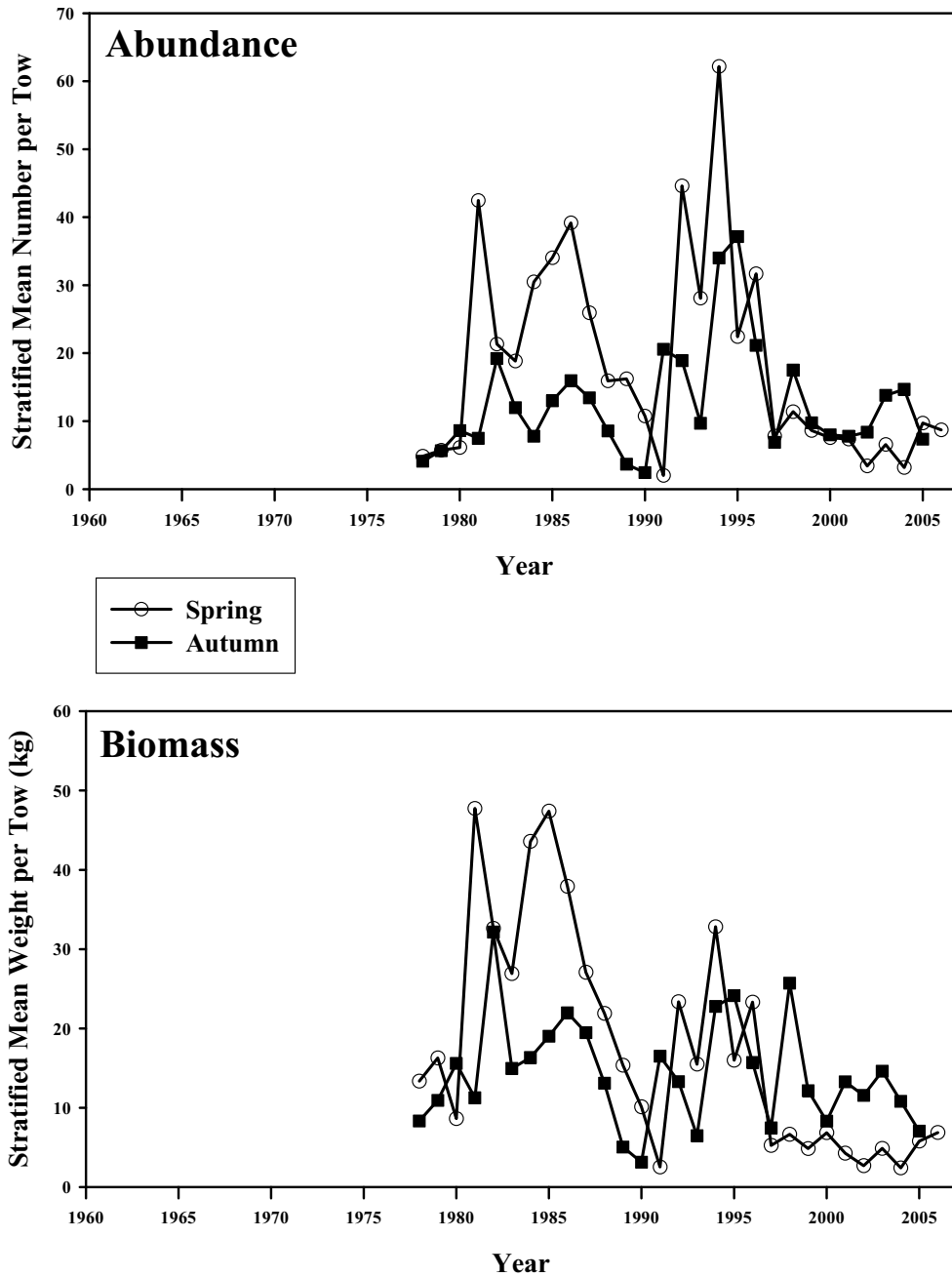


Figure B2.25. Abundance and biomass of winter skate from the Massachusetts spring and autumn finfish bottom trawl survey in state waters (strata 11-36).

## Winter Skate - CTDEP Finfish Survey

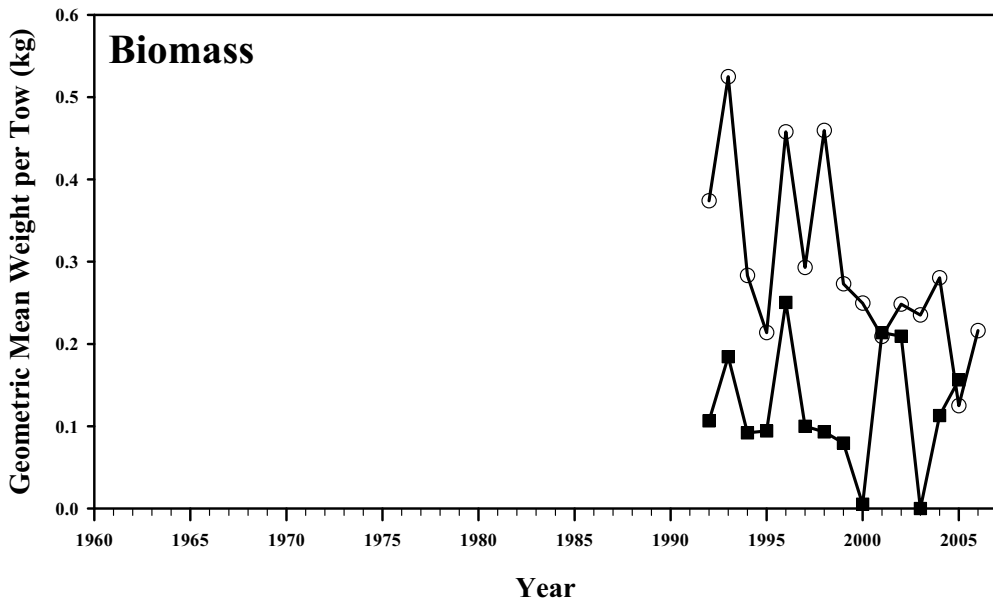
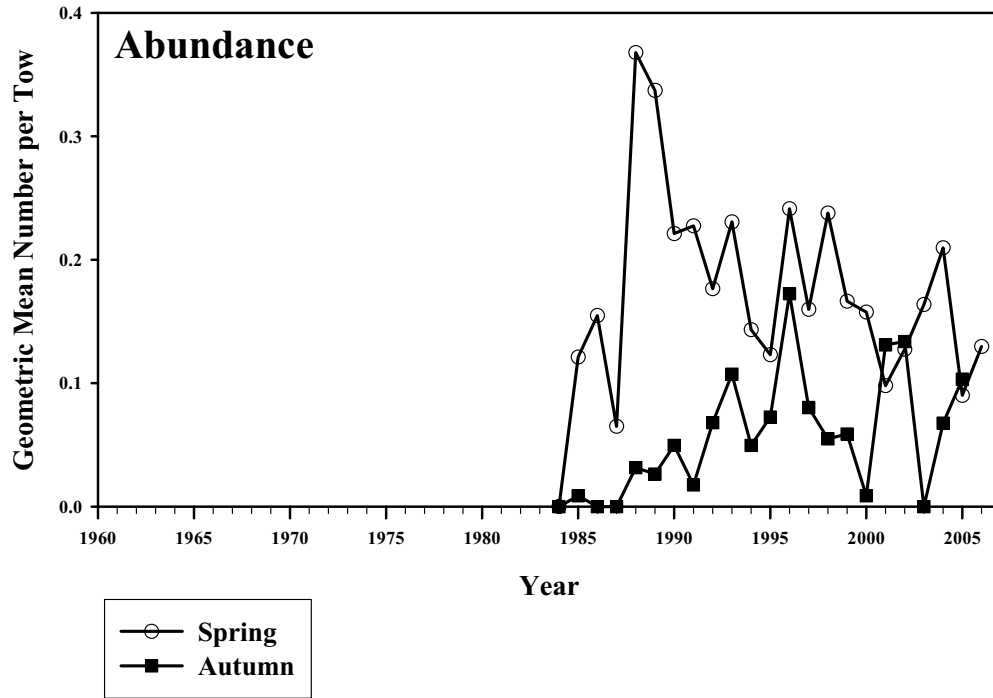
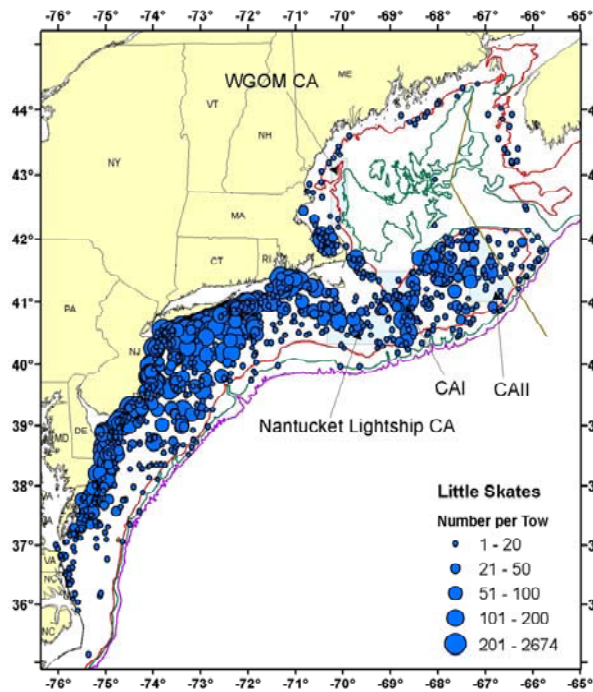
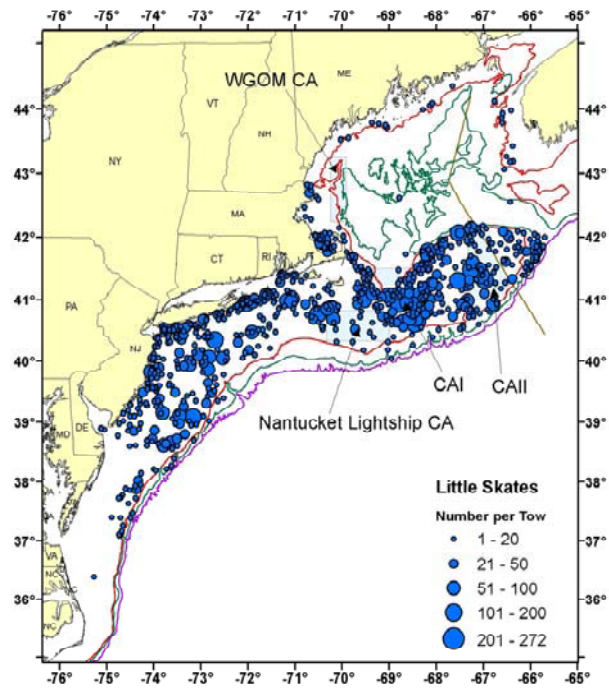


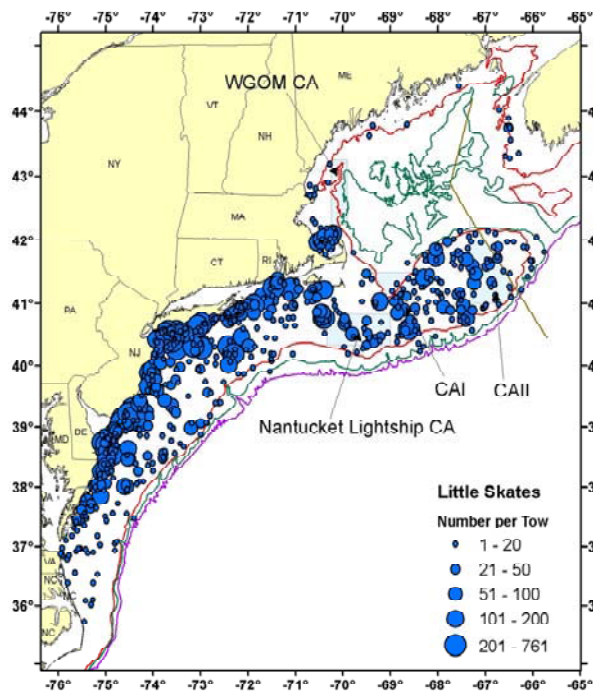
Figure B2.26. Abundance and biomass of winter skate from the CTDEP spring and autumn finfish bottom trawl survey in Connecticut state waters, 1984-2006.



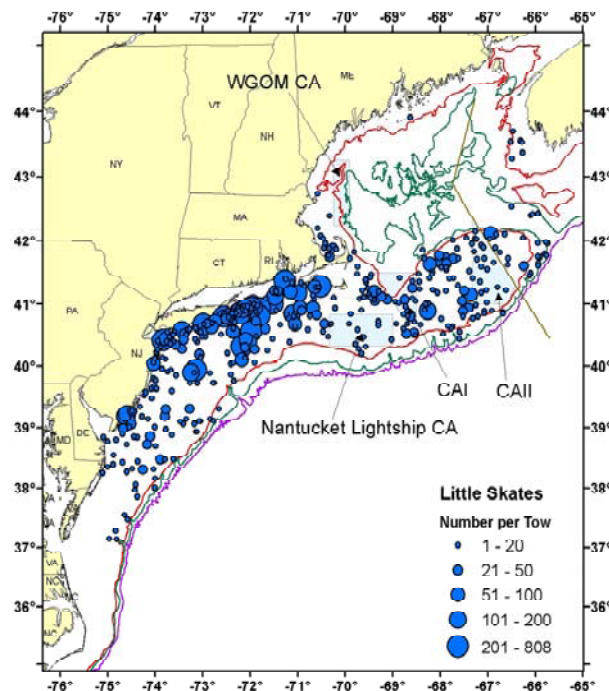
Little Skates from 1998-2002 NEFSC Spring Surveys



Little Skates from 1998-2002 NEFSC Fall Surveys



Little Skates from 2003-2006 NEFSC Spring Surveys



Little Skates from 2003-2005 NEFSC Fall Surveys

Figure B2.27. Distribution of little skate from the spring and autumn NEFSC surveys from 1998-2006.

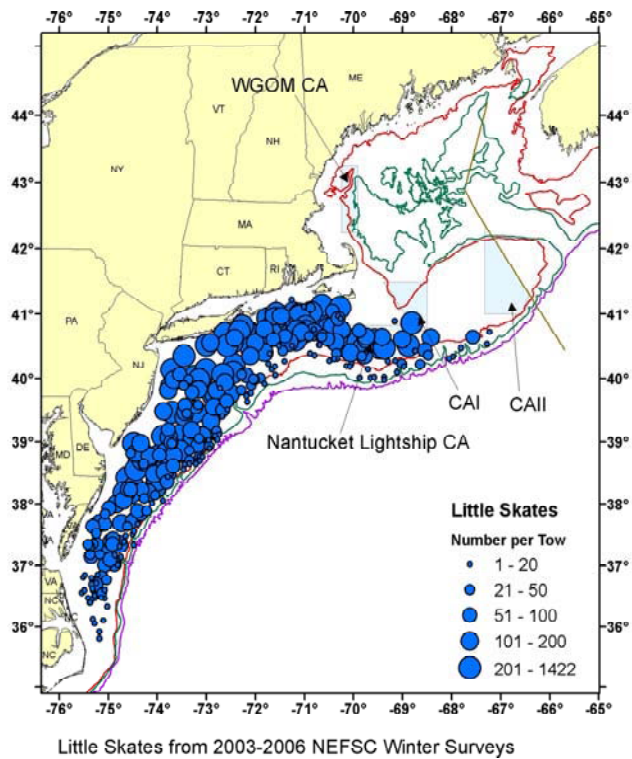
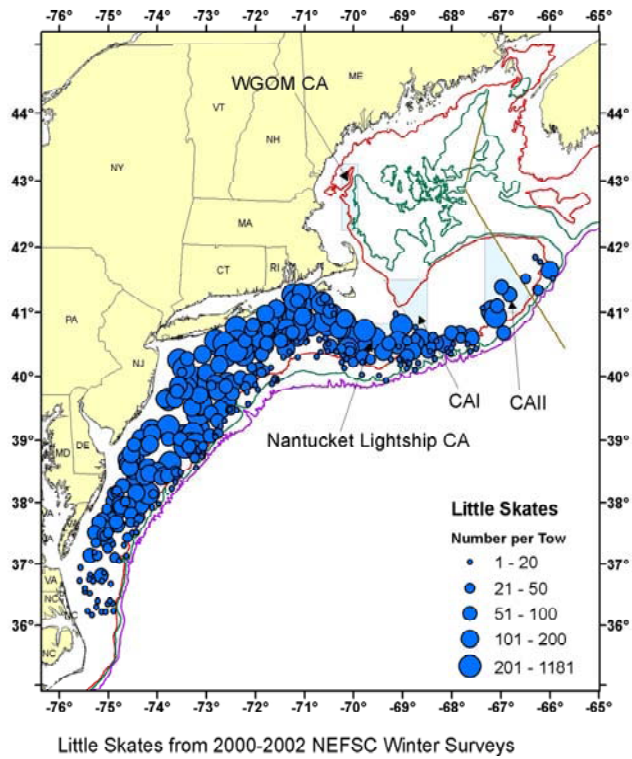
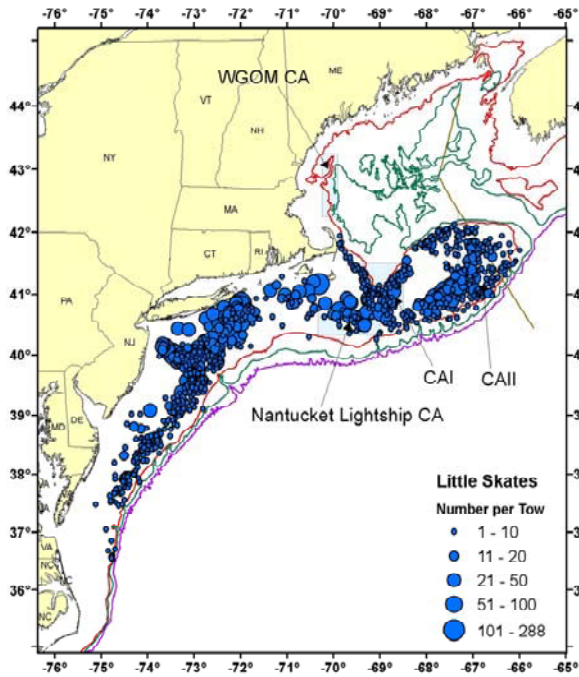
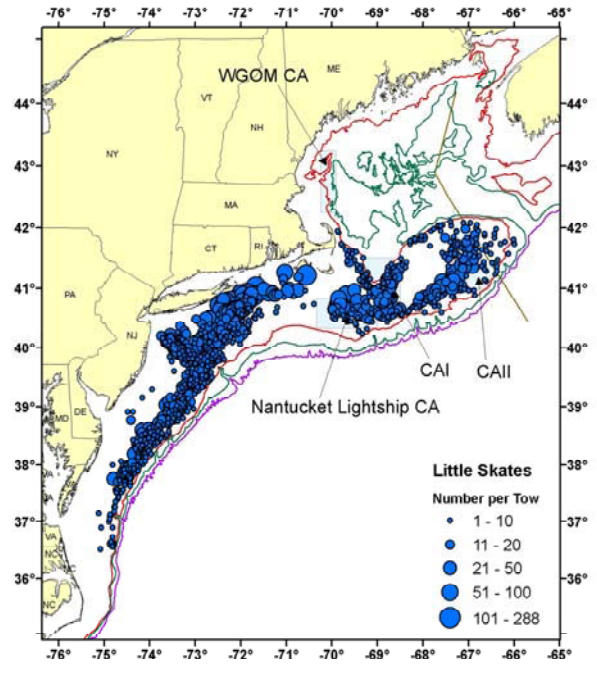


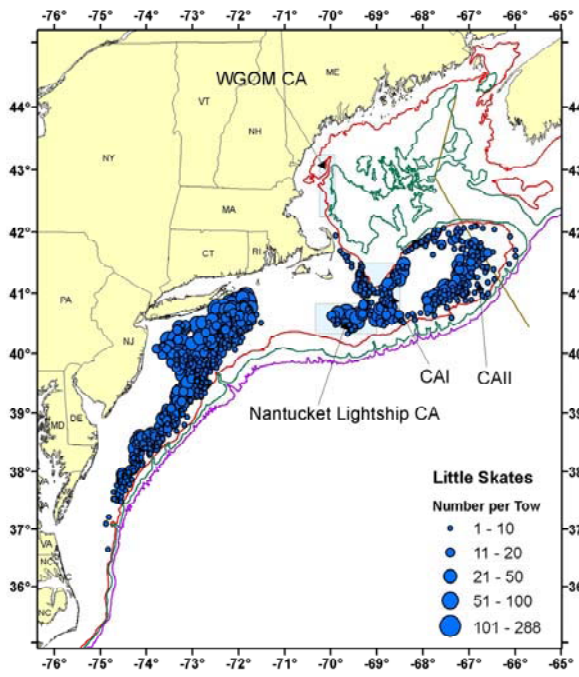
Figure B2.28. Distribution of little skate from the NEFSC winter surveys from 2000-2006.



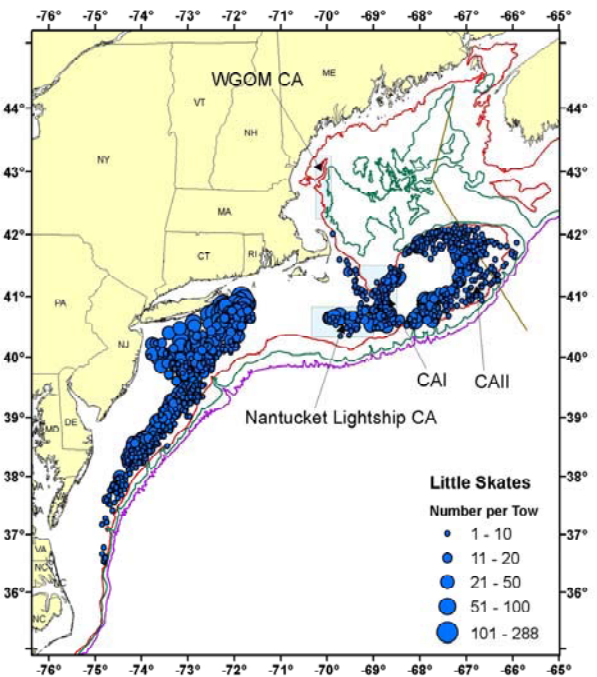
Little Skates from 1985-1987 NEFSC Scallop Surveys



Little Skates from 1988-1990 NEFSC Scallop Surveys

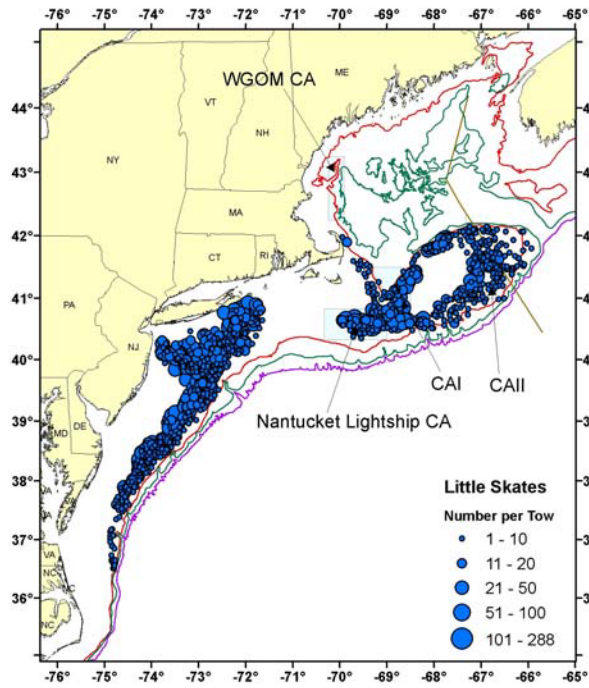


Little Skates from 1991-1993 NEFSC Scallop Surveys

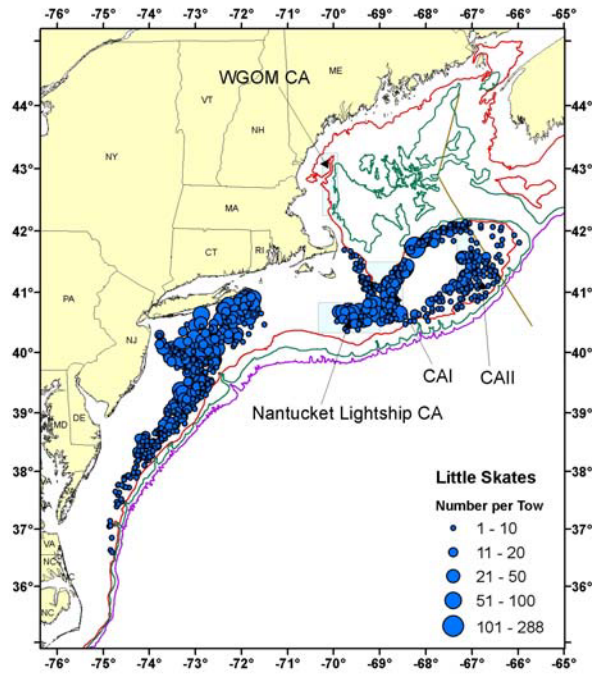


Little Skates from 1994-1996 NEFSC Scallop Surveys

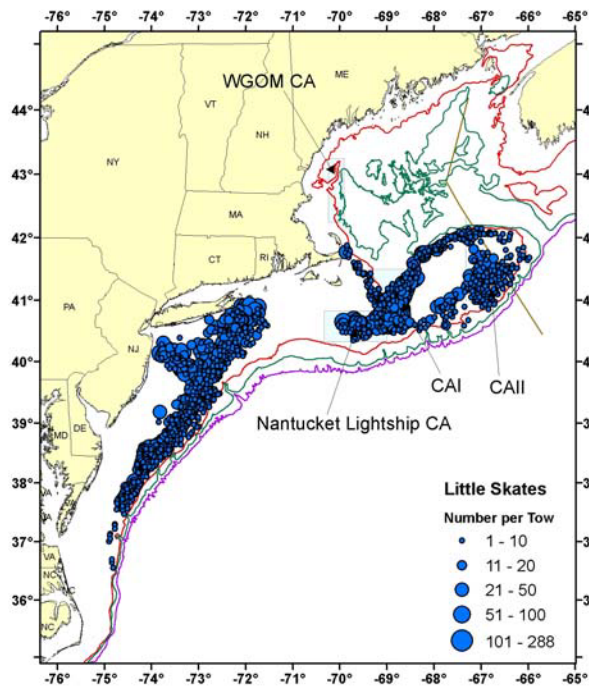
Figure B2.29. Distribution of little skate from the NEFSC scallop surveys from 1985-1996.



Little Skates from 1997-1999 NEFSC Scallop Surveys



Little Skates from 2000-2002 NEFSC Scallop Surveys



Little Skates from 2003-2006 NEFSC Scallop Surveys

Figure B2.30. Distribution of little skate from the NEFSC scallop surveys from 1997-2006.

## Little Skate GOM-MA All Strata

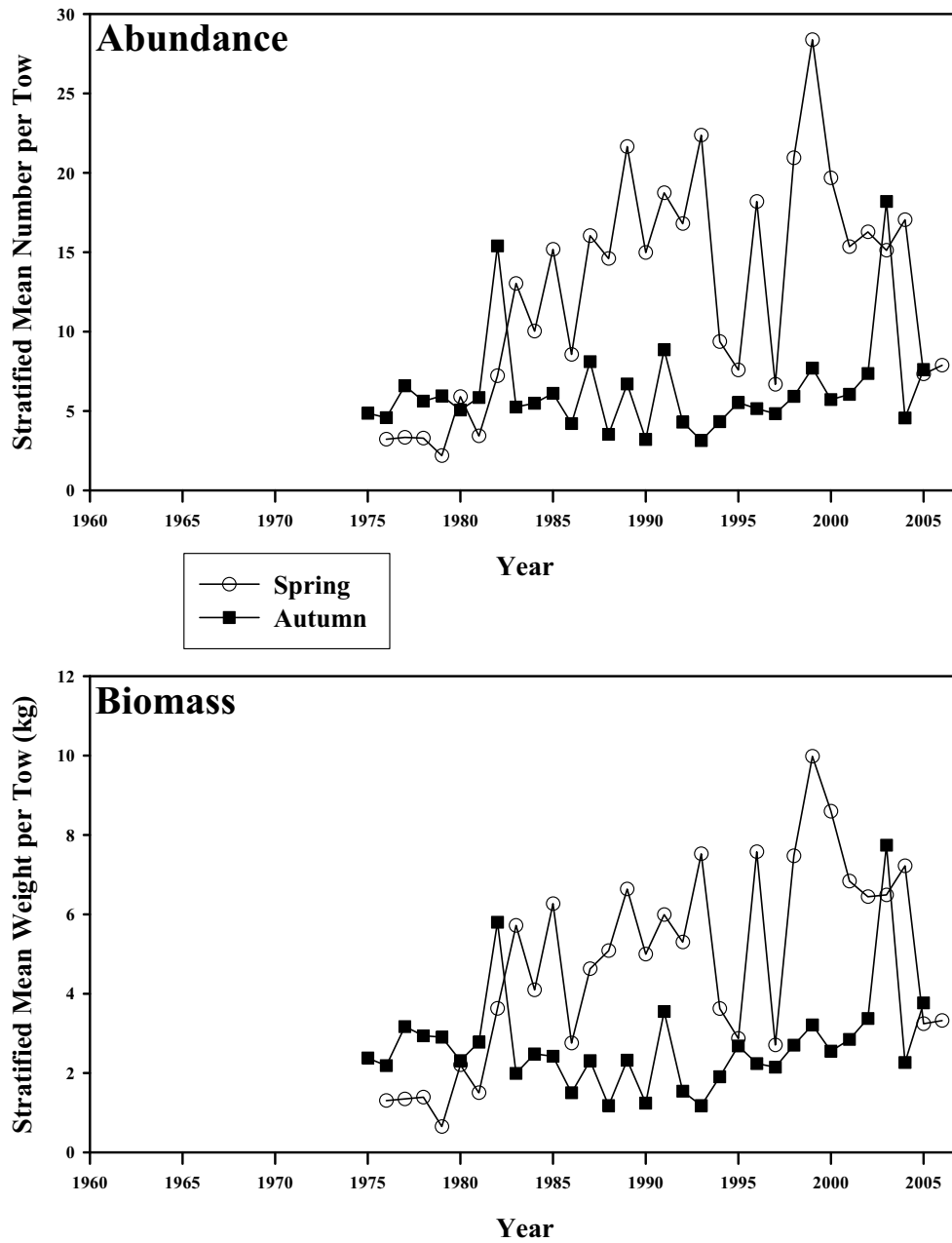


Figure B2.31. Abundance and biomass of little skate from the NESFC spring (circles) and autumn (squares) bottom trawl surveys from 1975-2006 in the Gulf of Maine to Mid-Atlantic (all strata).

## Little Skate GOM-MA All Strata - Spring Survey

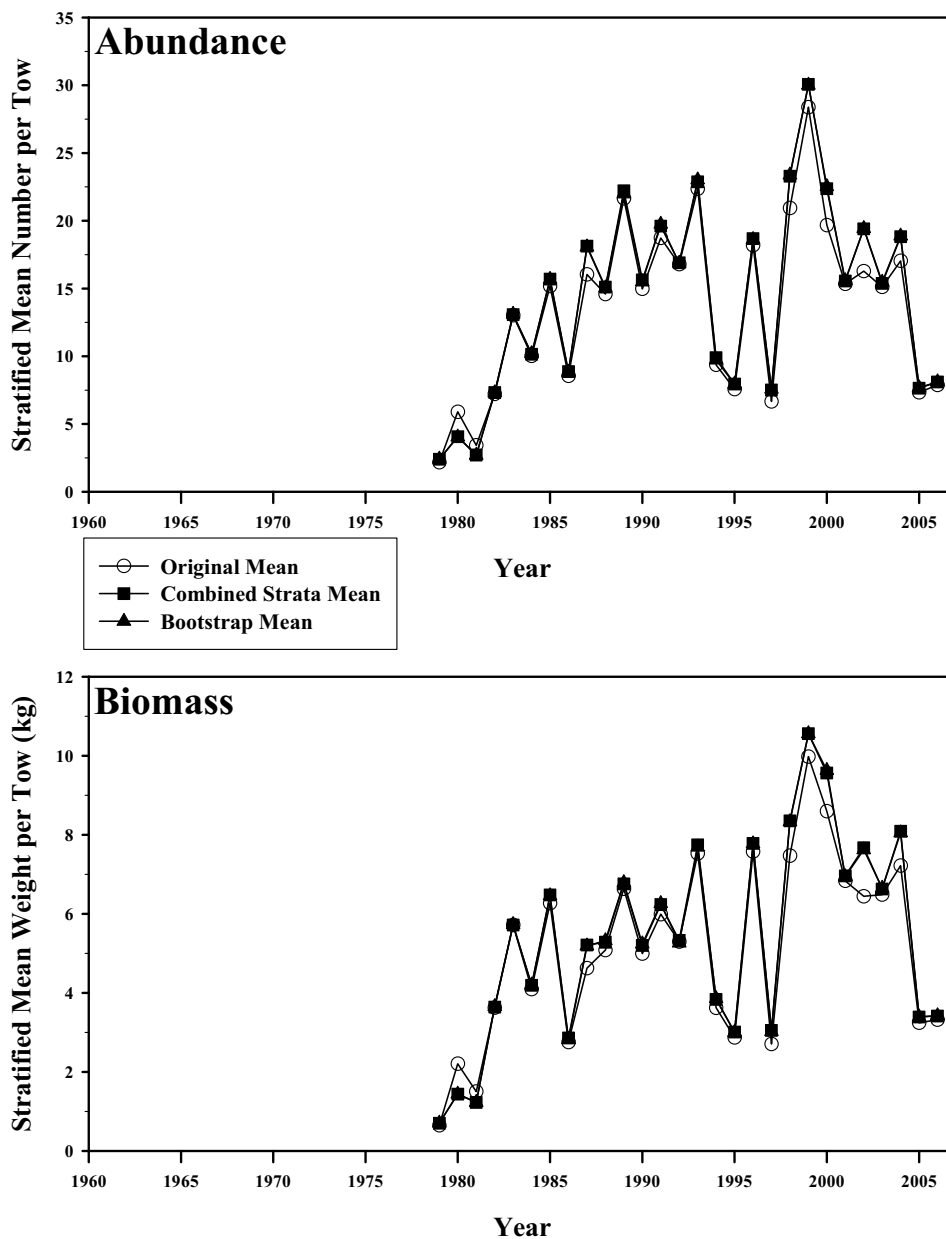


Figure B2.32. Abundance and biomass of little skate from the NESFC spring bottom trawl surveys from 1979-2006 in the Gulf of Maine to Mid-Atlantic (all strata). The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.



## Little Skate - Spring Survey GOM-MA All Strata

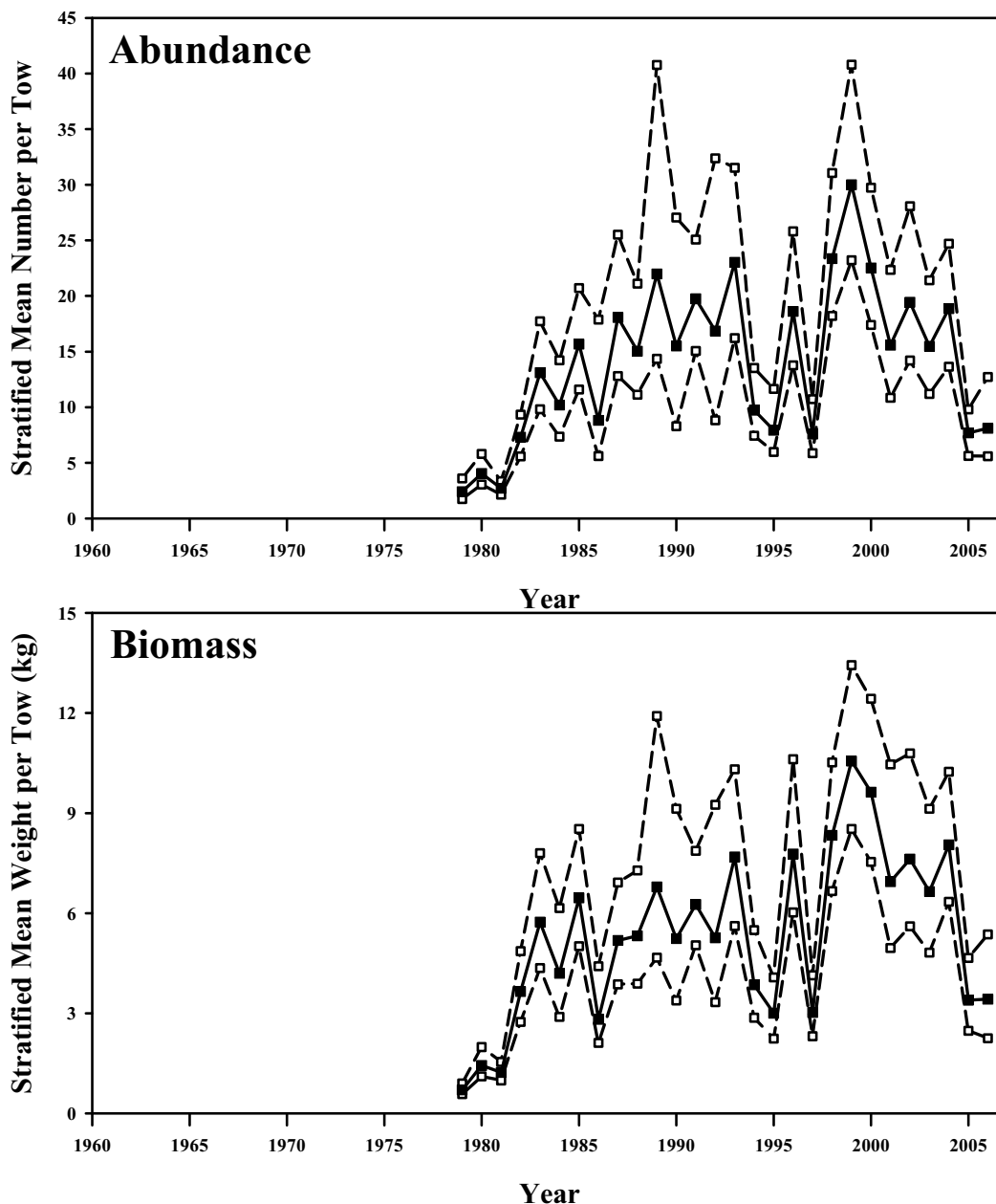


Figure B2.33. Bootstrapped abundance and biomass of little skate from the NESFC spring bottom trawl survey in the Gulf of Maine to Mid-Atlantic region (all strata). Mean index in solid squares, 95% confidence interval in open squares.

## Little Skate GOM-MA All Strata - Autumn Survey

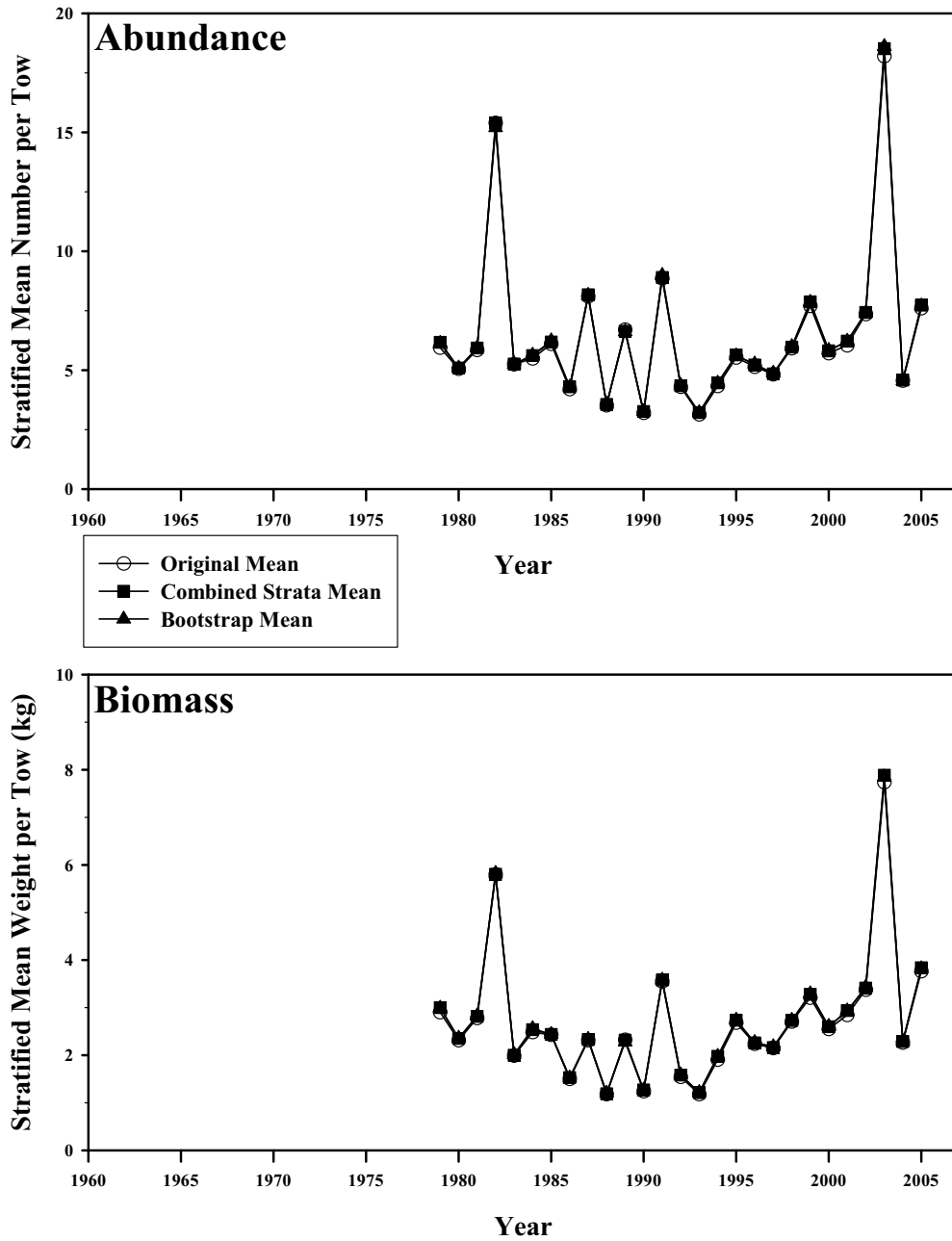


Figure B2.34. Abundance and biomass of little skate from the NESFC autumn bottom trawl surveys from 1979-2005 in the Gulf of Maine to Mid-Atlantic (all strata). The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Little Skate - Autumn Survey GOM-MA All Strata

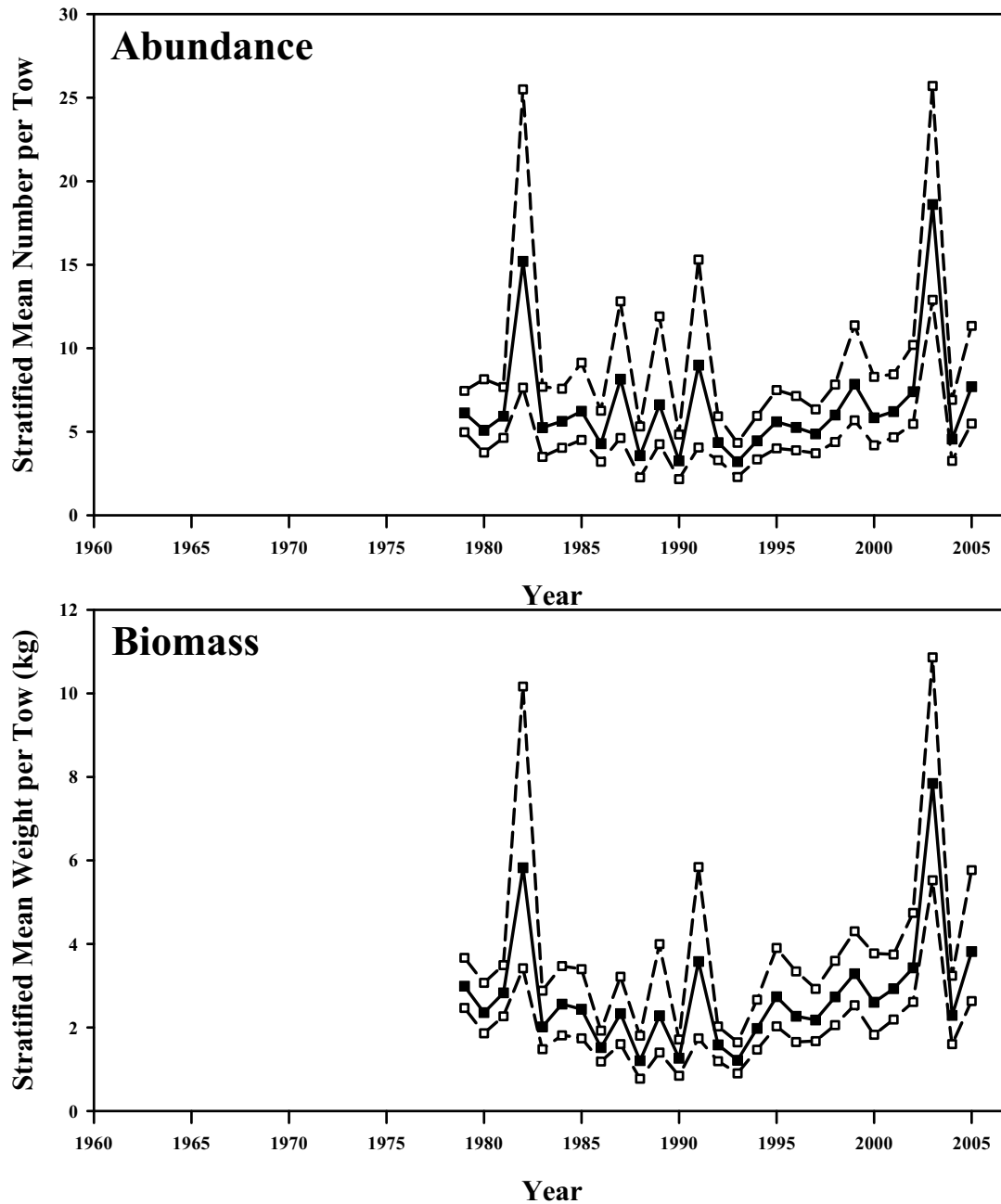


Figure B2.35. Bootstrapped abundance and biomass of little skate from the NESFC autumn bottom trawl survey in the Gulf of Maine to Mid-Atlantic region (all strata). Mean index in solid squares, 95% confidence interval in open squares.

## Little Skate: GOM-MA All strata Percentiles of Length Composition

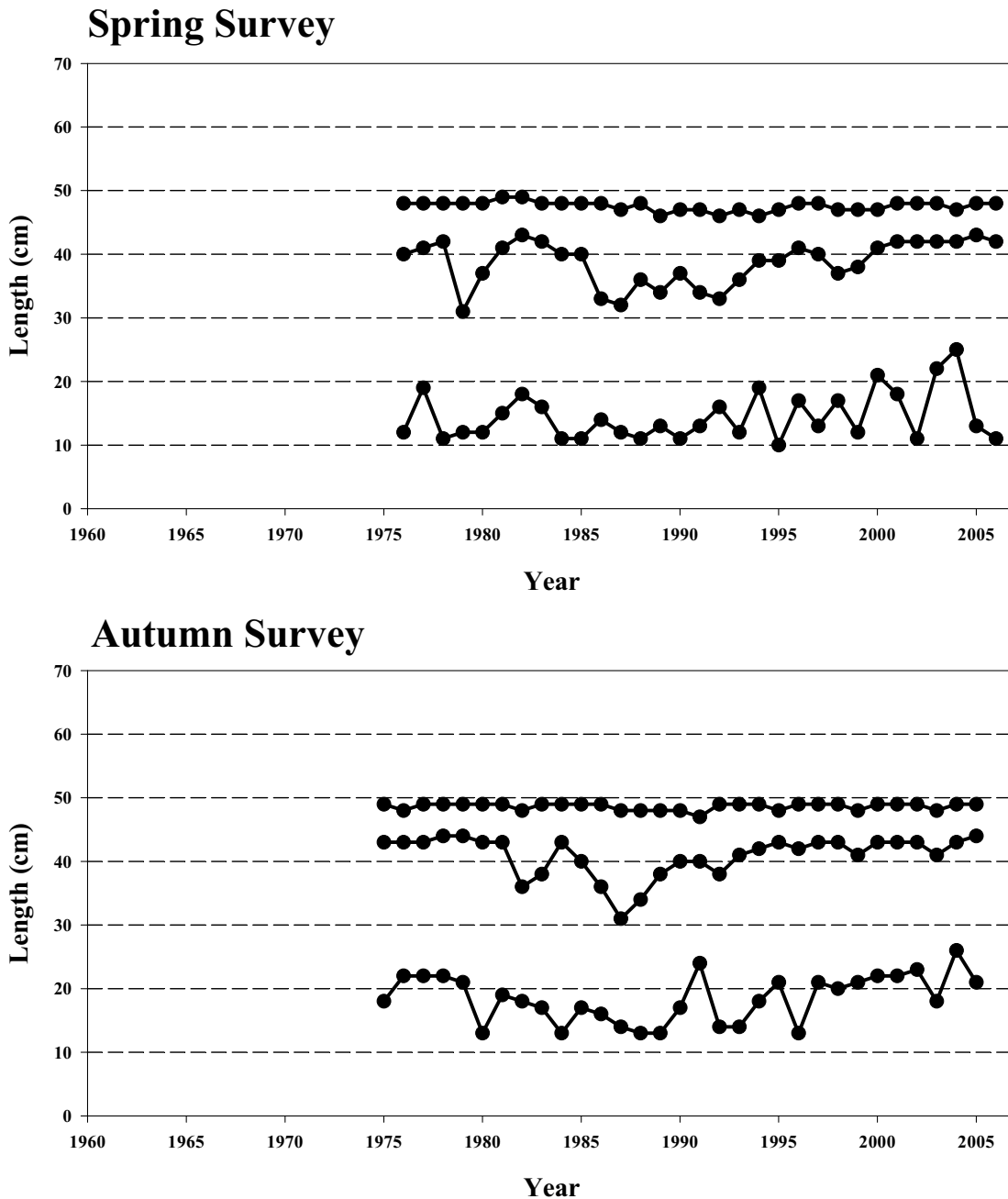


Figure B2.36. Percentiles of length composition (5, 50, and 95) of little skate from the NESFC spring and autumn bottom trawl surveys from 1975-2006 in the Gulf of Maine to Mid-Atlantic region (all strata).

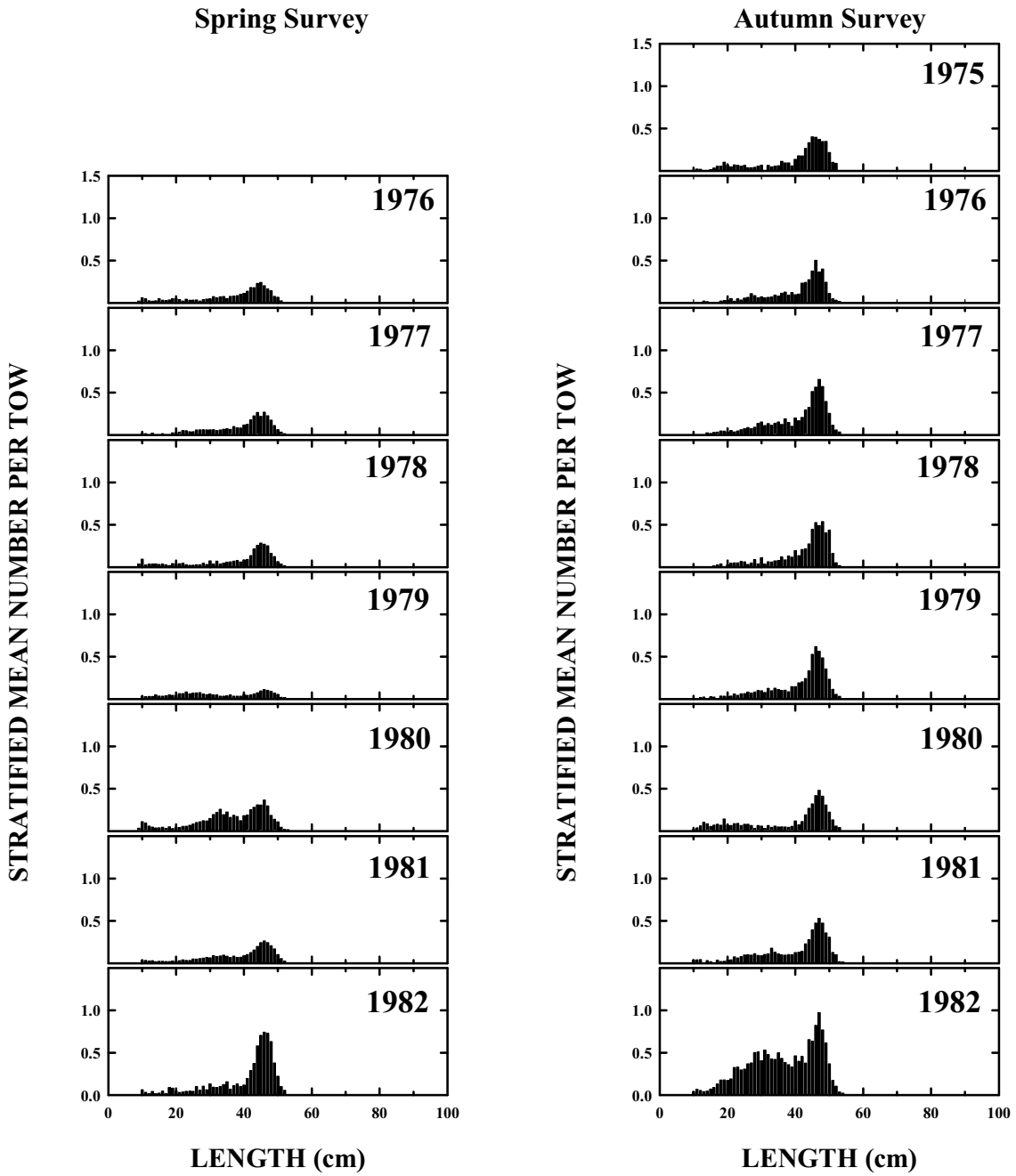


Figure B2.37. Little skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Mid-Atlantic (all strata), 1975-1982.

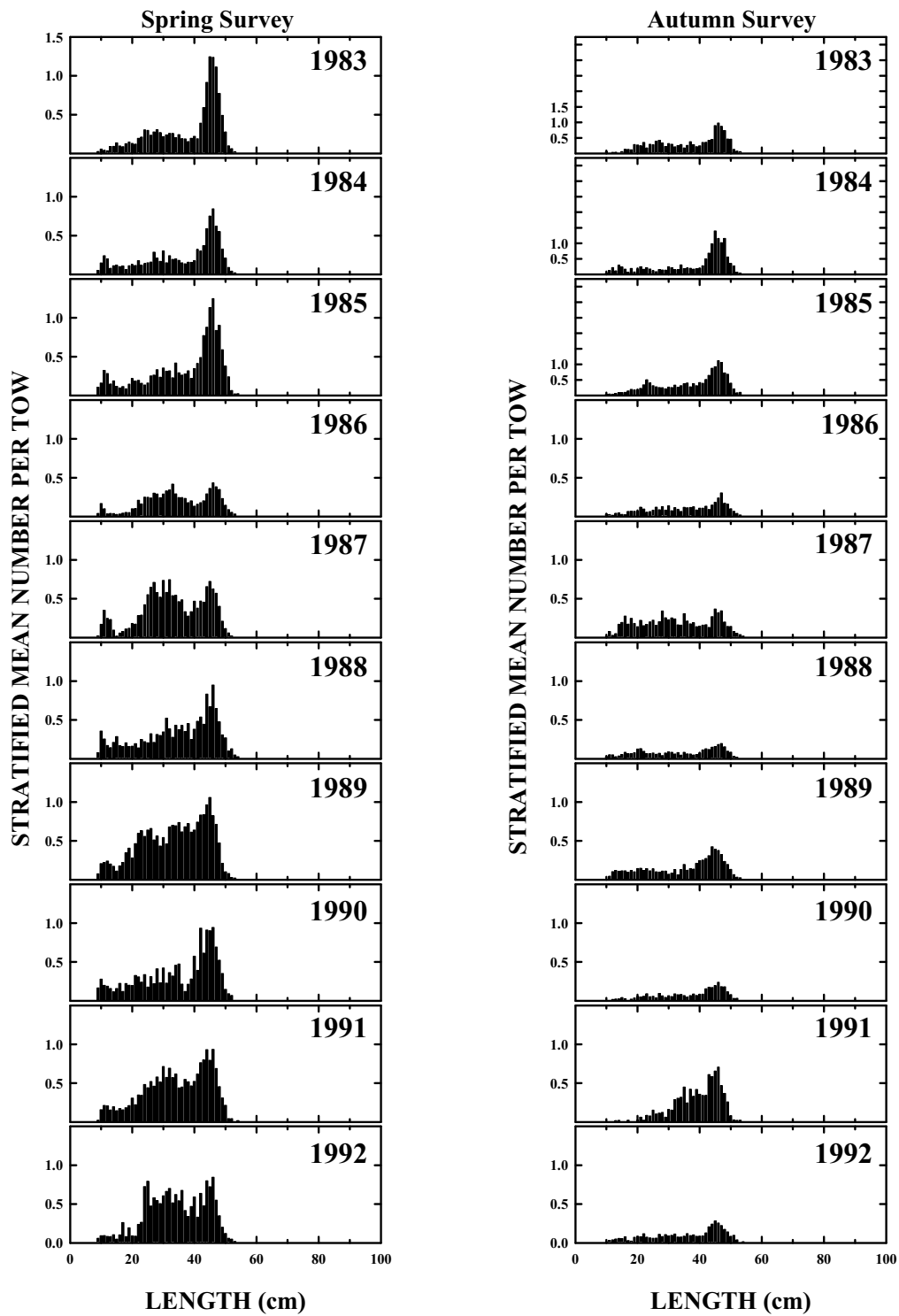


Figure B.2.38. Little skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Mid-Atlantic (all strata), 1983-1992.

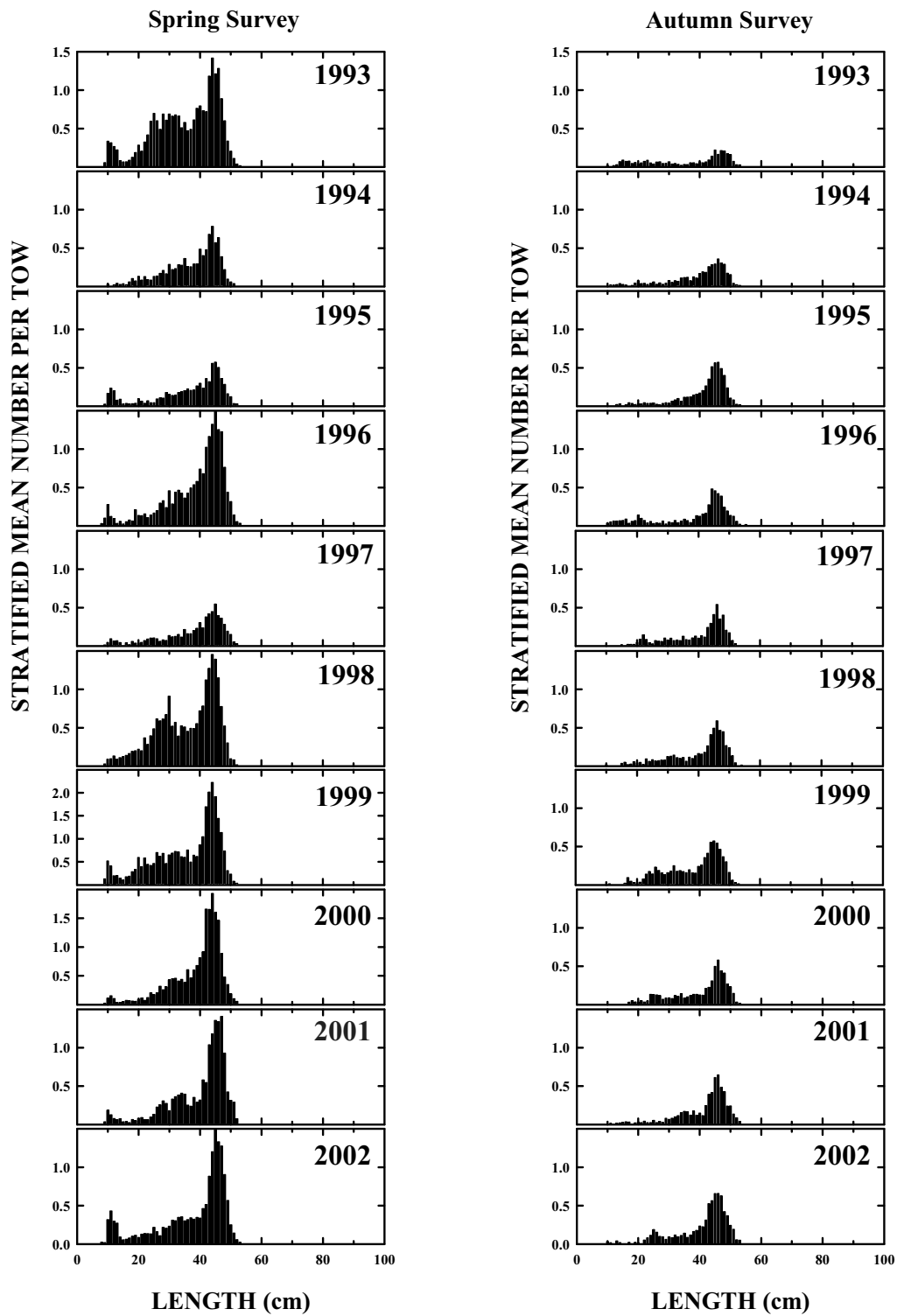


Figure B2.39. Little skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Mid-Atlantic (all strata), 1993-2002.

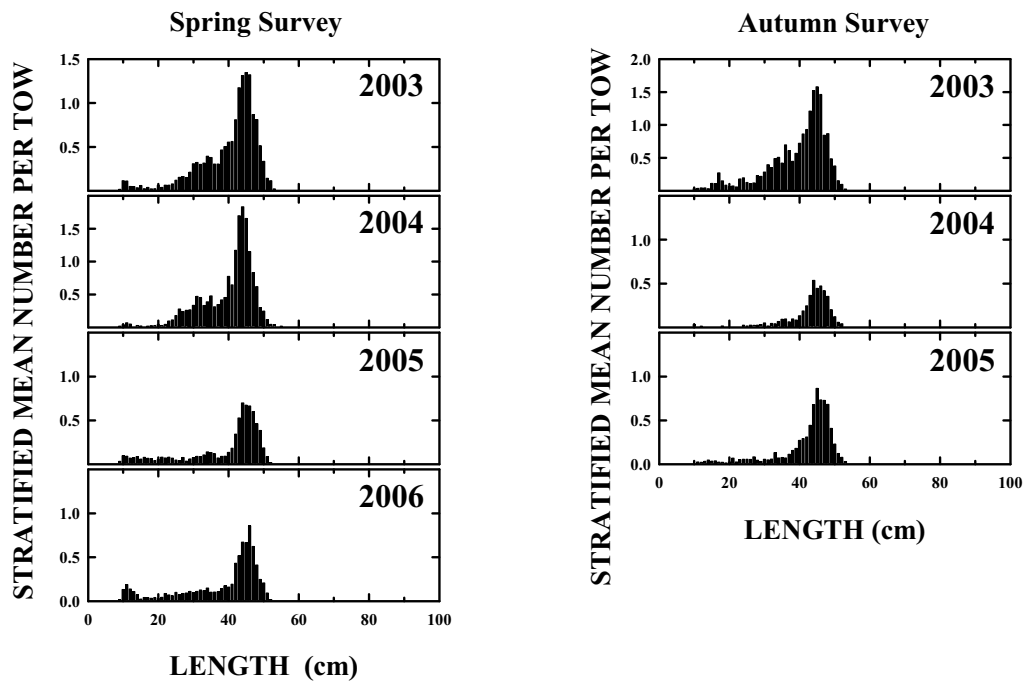


Figure B2.40. Little skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Mid-Atlantic (all strata), 2003-2006.



# Little Skate Winter Survey

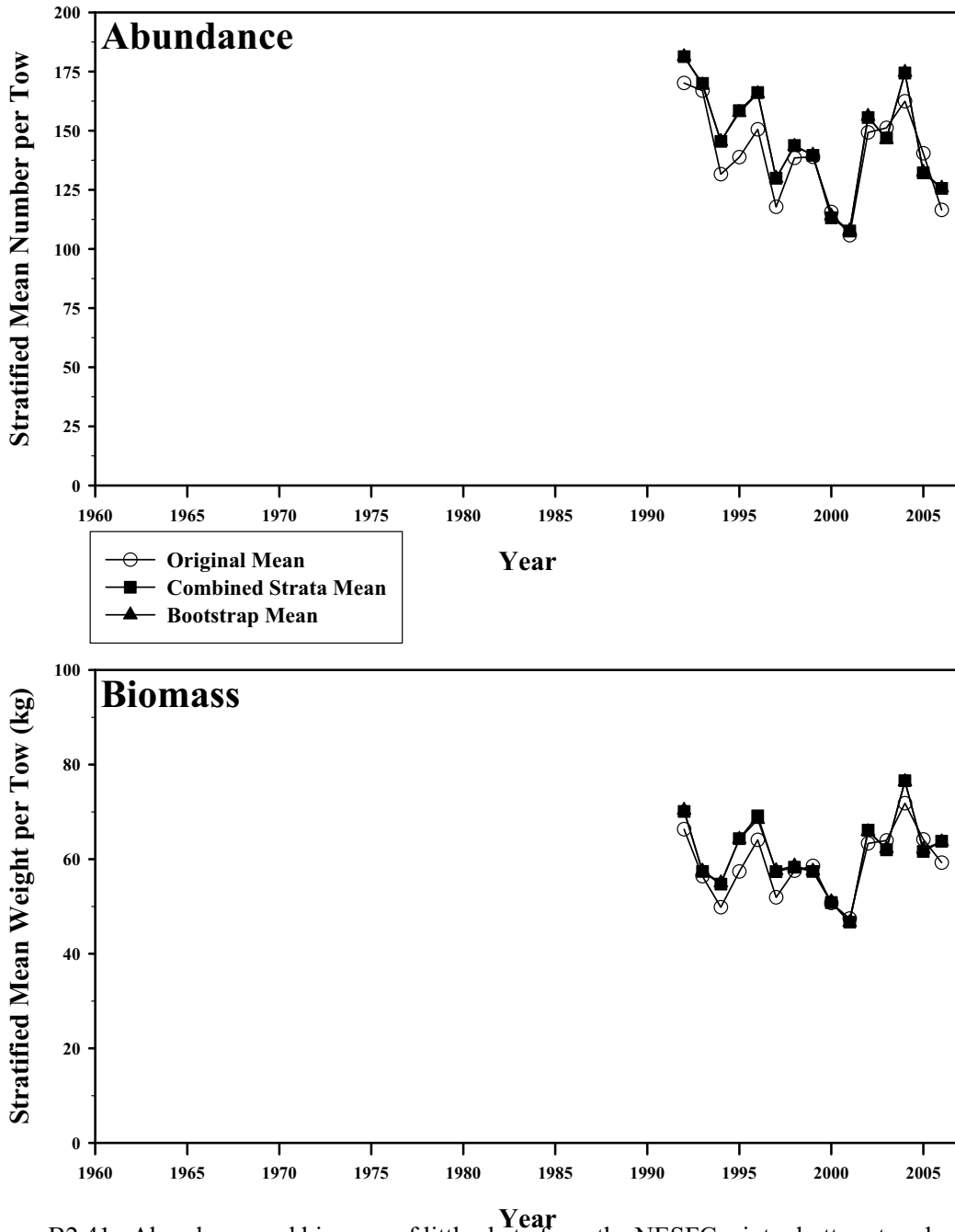


Figure B2.41. Abundance and biomass of little skate from the NESFC winter bottom trawl surveys from 1992-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Little Skate Winter Survey

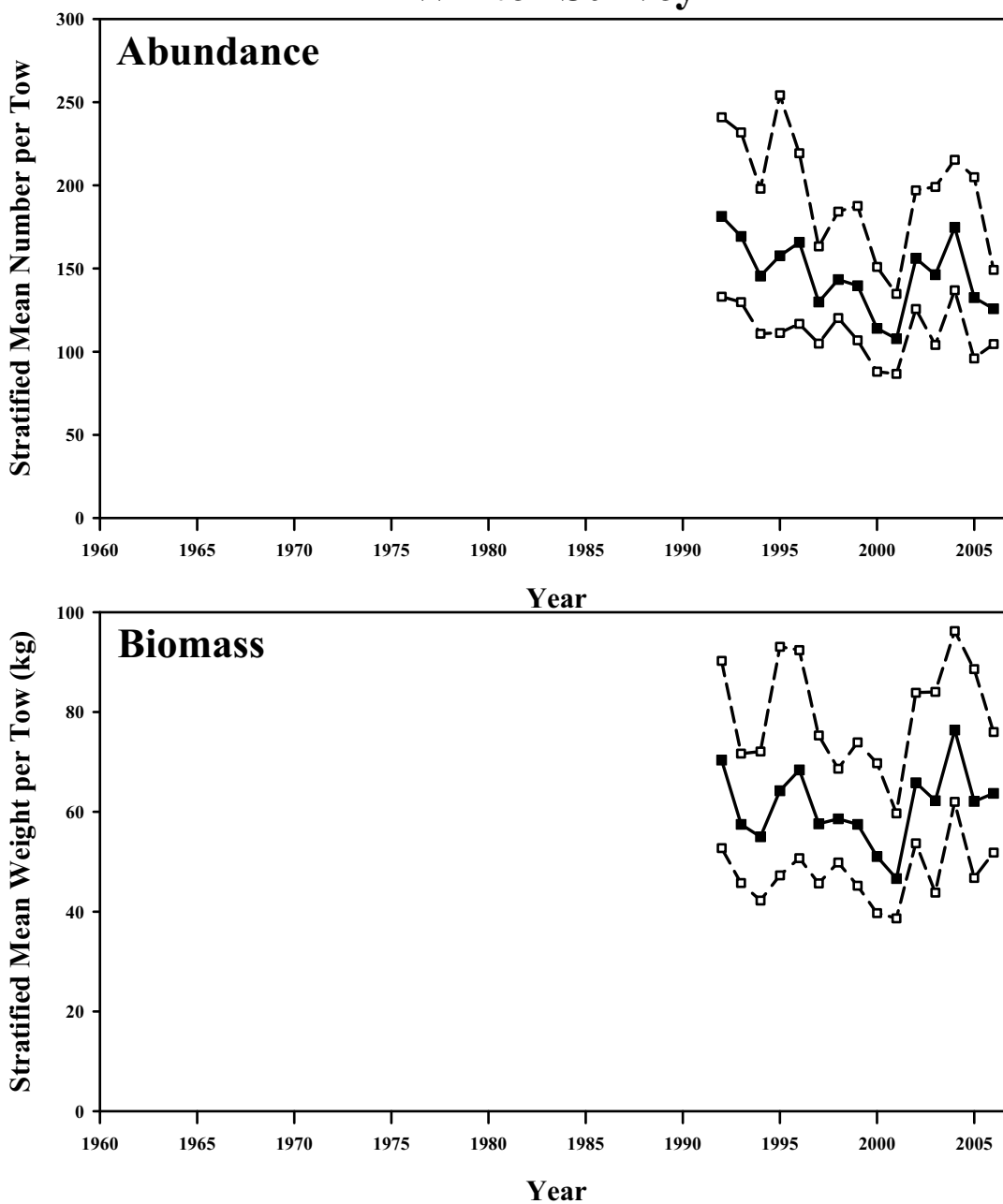


Figure B2.42. Bootstrapped abundance and biomass of little skate from the NESFC winter bottom trawl survey. Mean index in solid squares, 95% confidence interval in open squares.

## Little Skate Scallop Survey

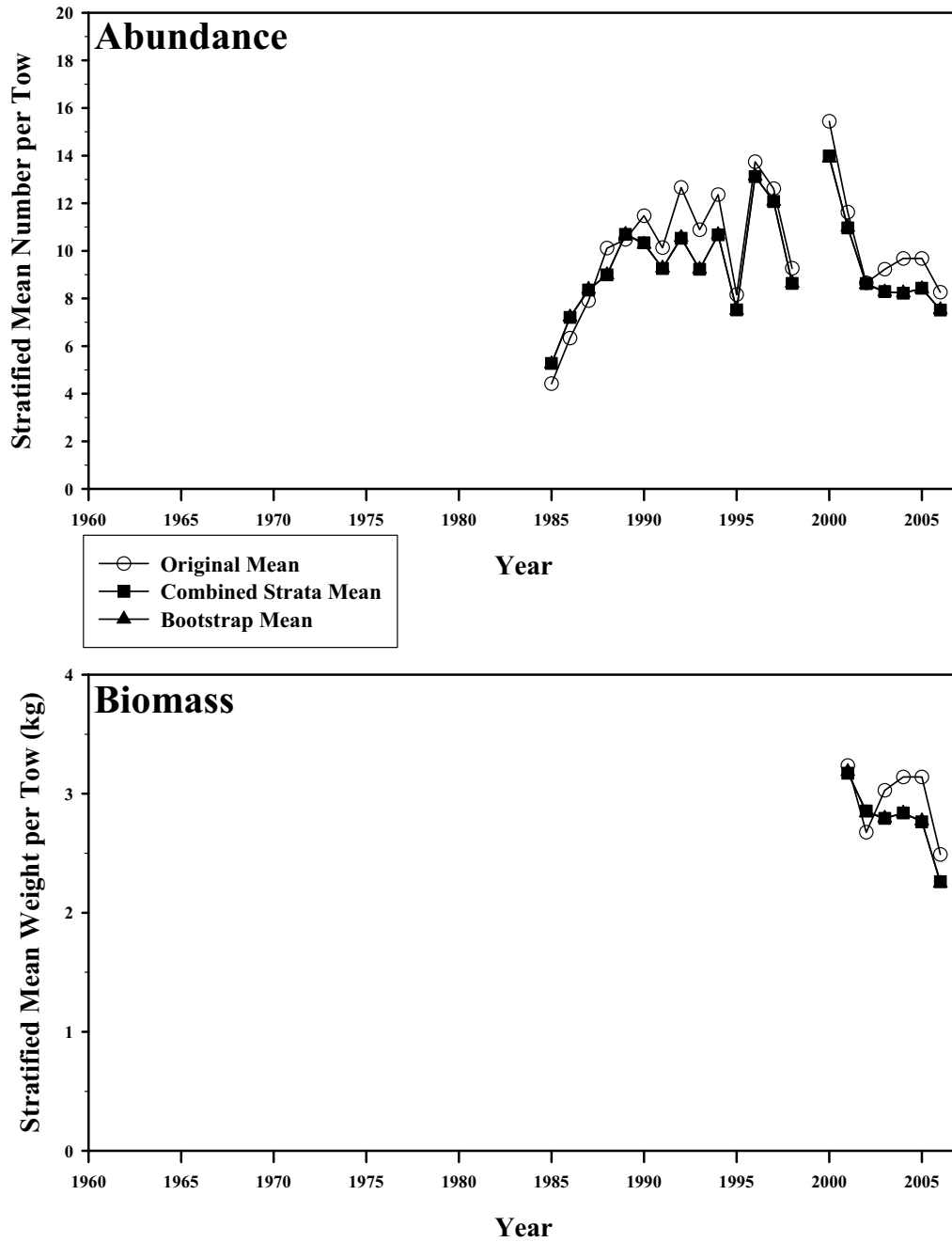


Figure B2.43. Abundance and biomass of little skate from the NESFC scallop surveys from 1985-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

# Little Skate Scallop Survey

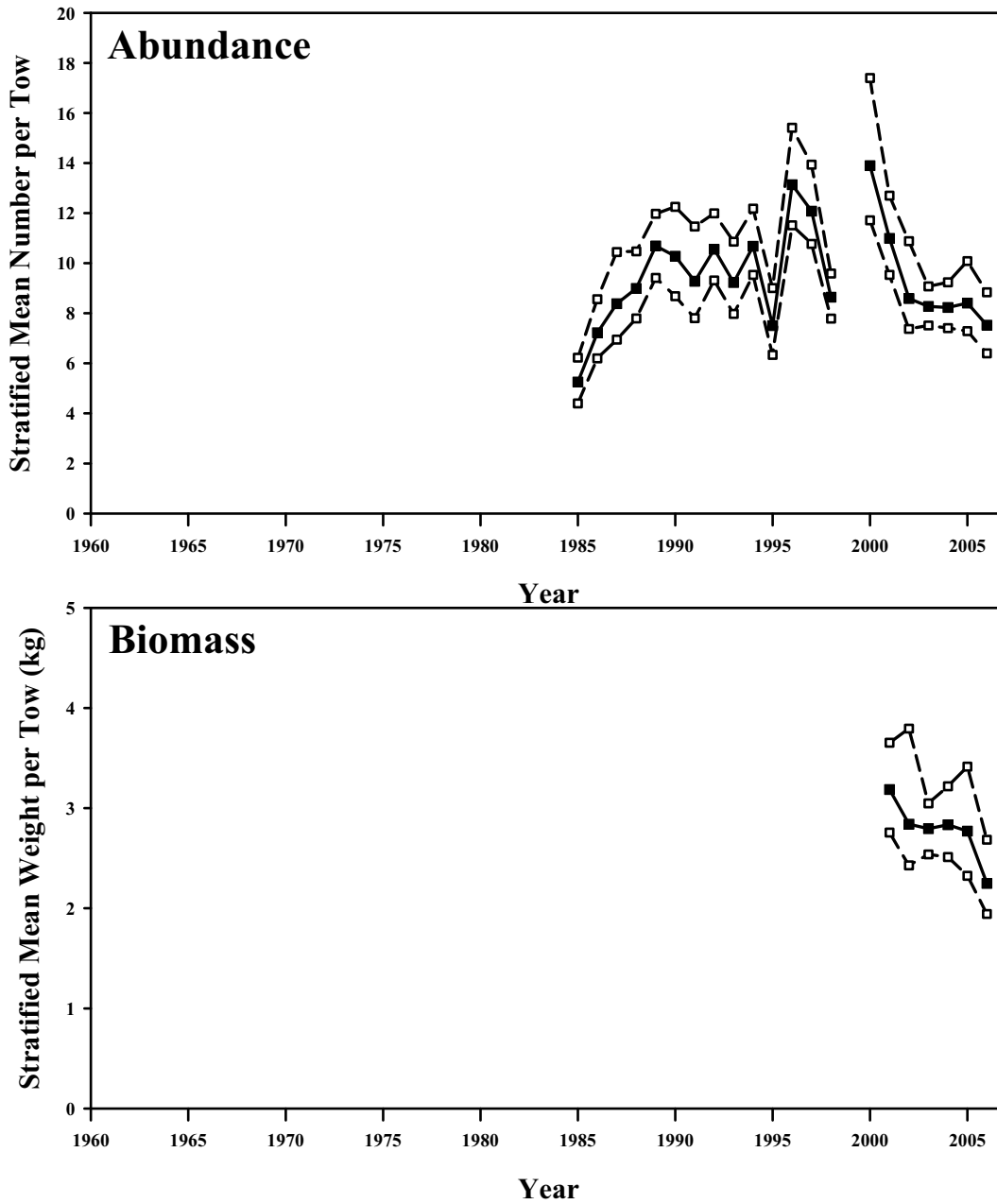


Figure B2.44. Bootstrapped abundance and biomass of little skate from the NESFC scallop survey. Mean index in solid squares, 95% confidence interval in open squares.

## Little Skate - Massachusetts Trawl Survey

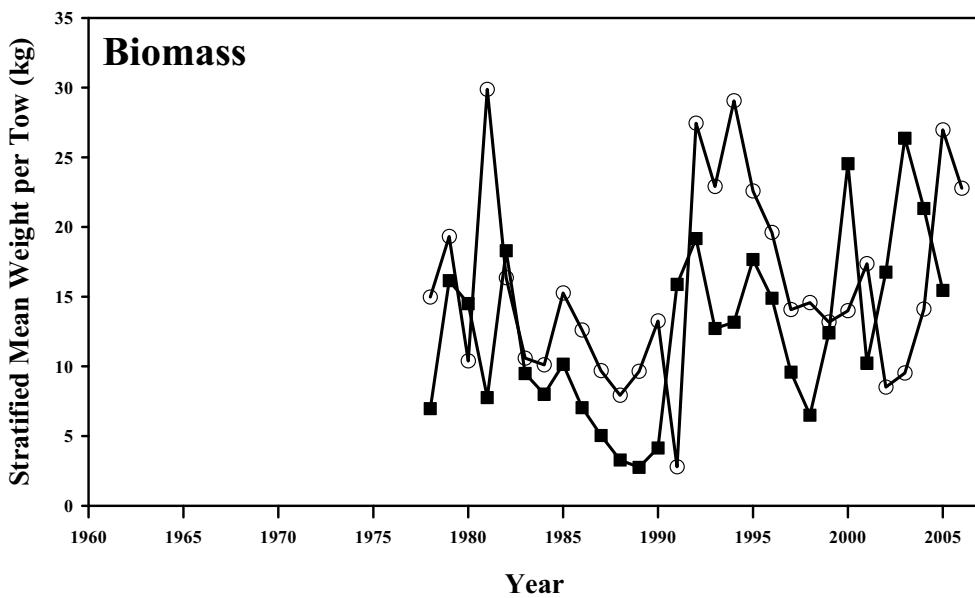
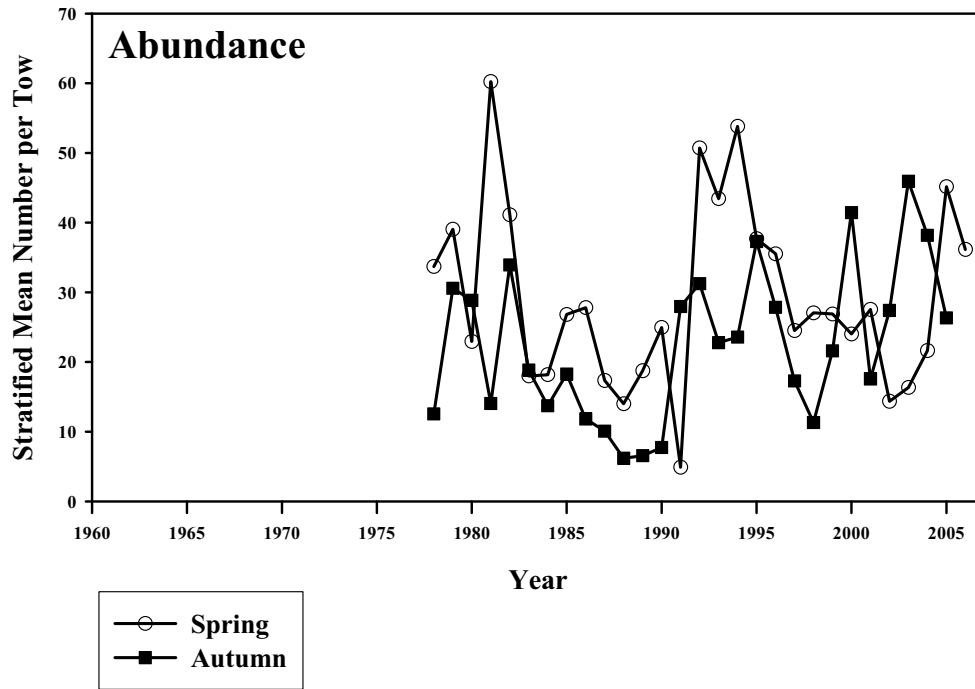


Figure 2.45. Abundance and biomass of little skate from the Massachusetts spring and autumn finfish bottom trawl survey in state waters (strata 11-36).

## Little Skate - CTDEP Finfish Survey

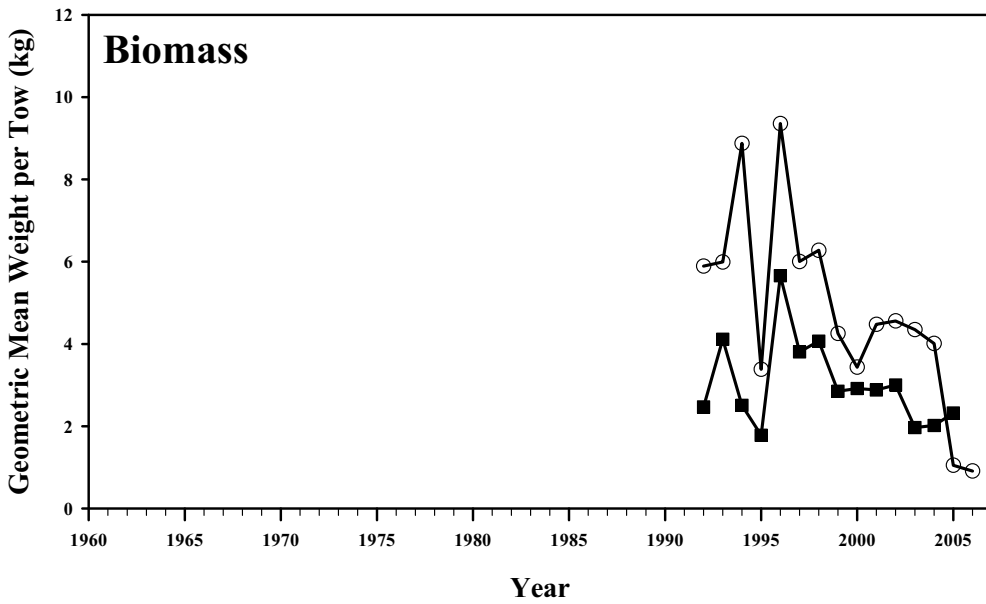
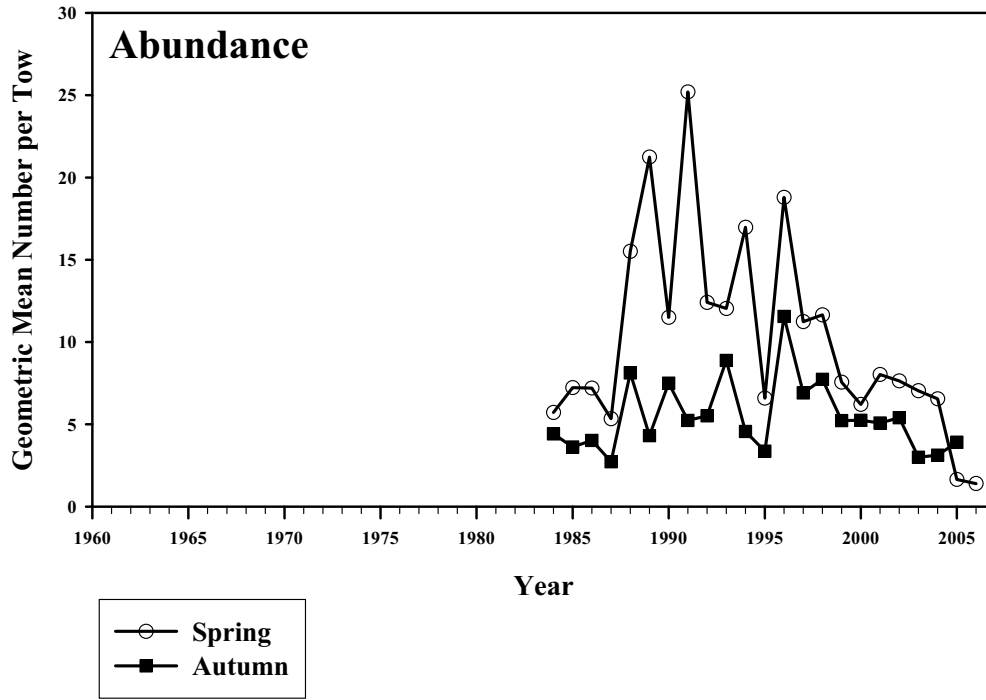
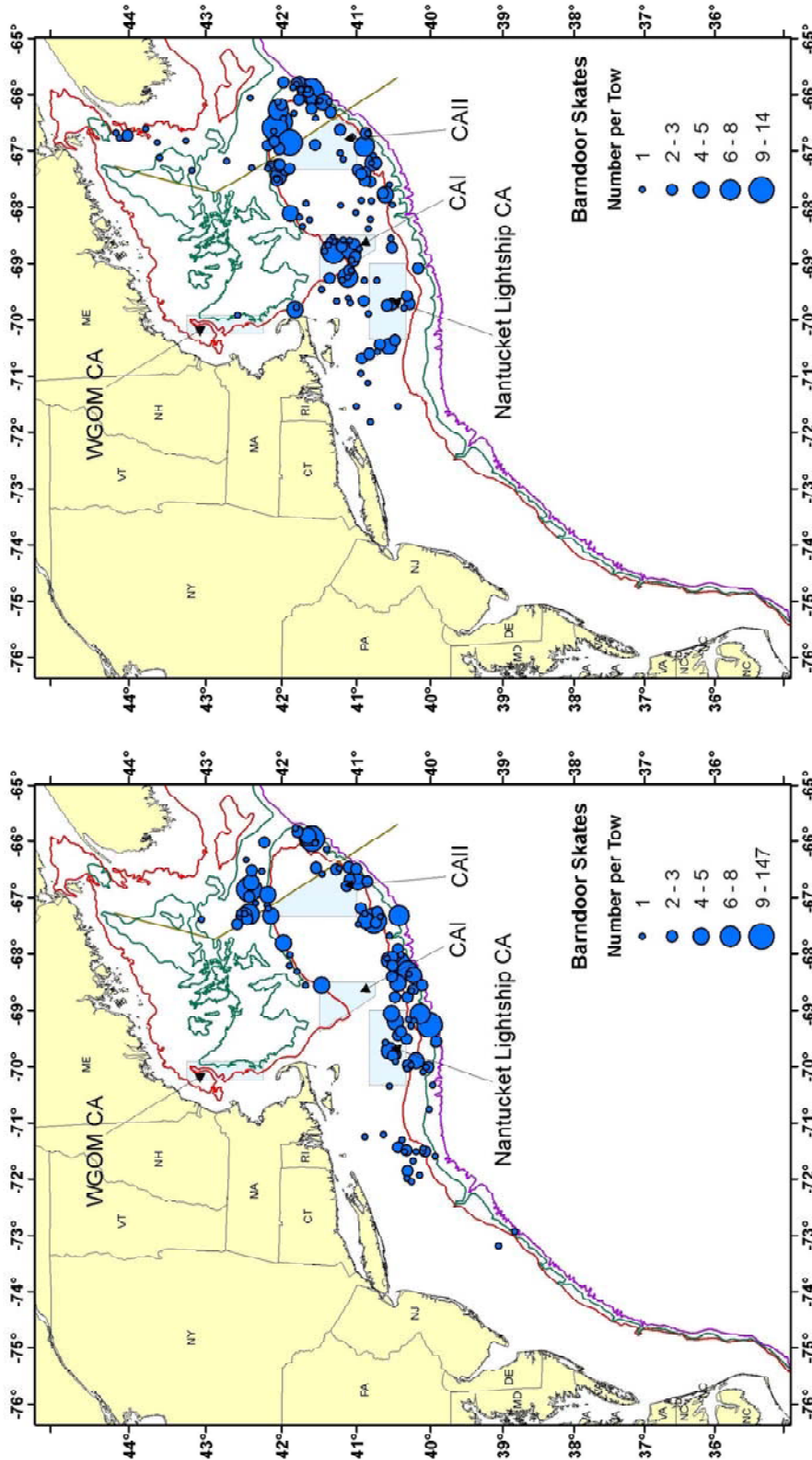


Figure B2.46. Abundance and biomass of little skate from the CTDEP spring and autumn finfish bottom trawl survey in Connecticut state waters, 1984-2006.



Barndoor Skates from 2000-2005 NEFSC Fall Surveys

Barndoor Skates from 2000-2006 NEFSC Spring Surveys

Figure B2.47. Distribution of barndoor skate from the spring and autumn NEFSC surveys from 2000-2006.

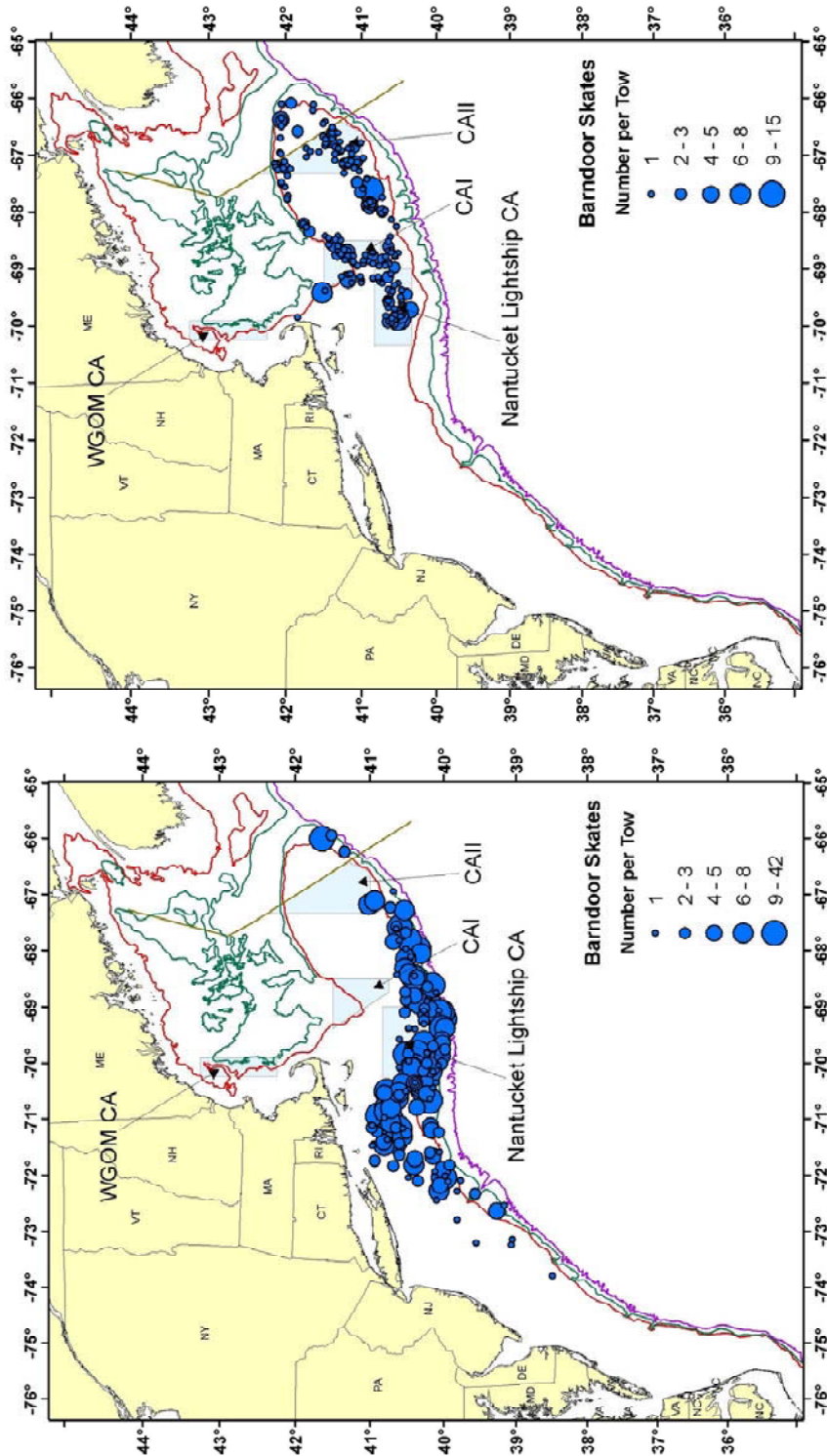


Figure B2.48. Distribution of barndoor skate from the winter NEFSC surveys from 2000-2006 and the NEFSC scallop surveys from 1991-2006.



## Barndoor Skate GOM-SNE Offshore Only

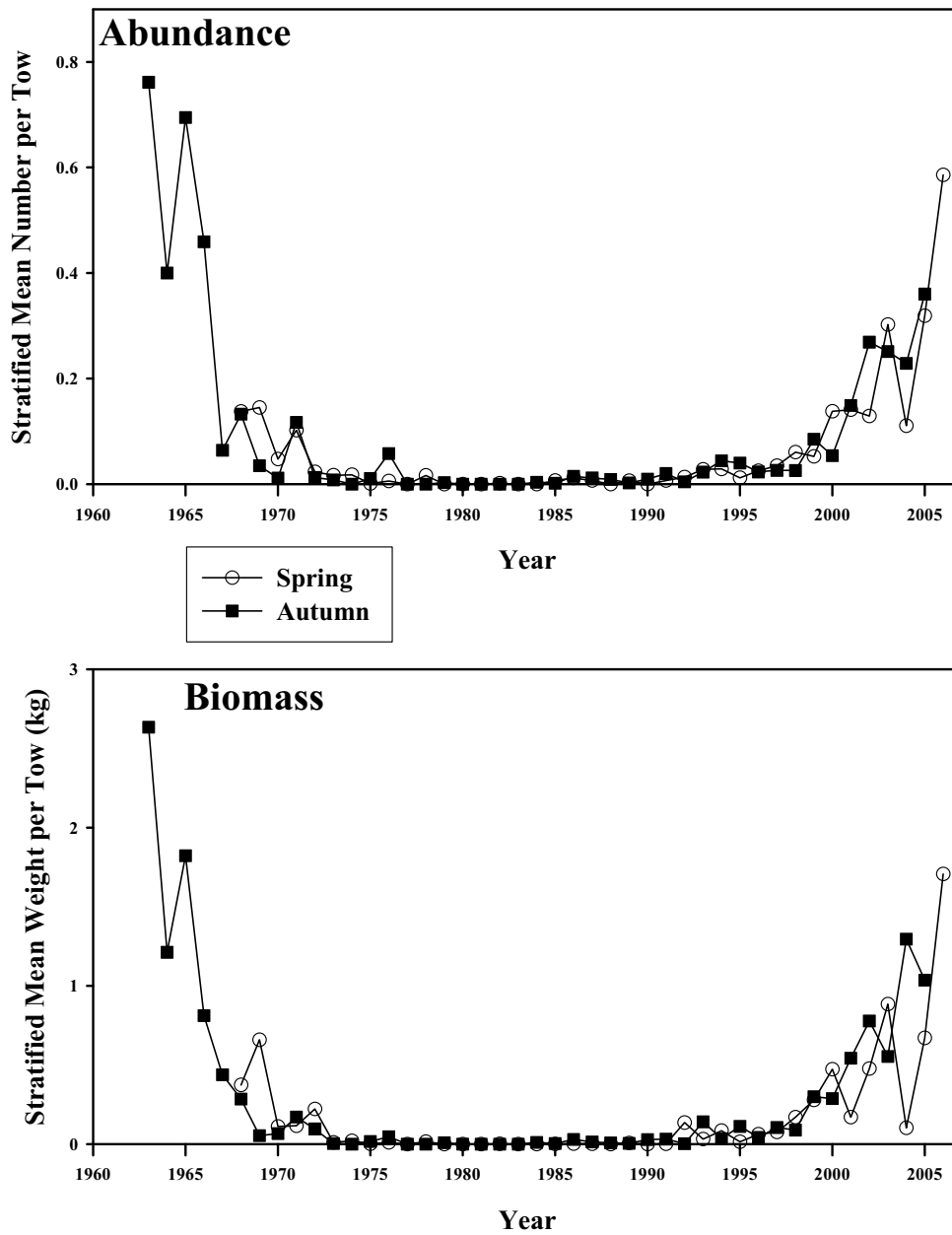


Figure B2.49. Abundance and biomass of barndoor skate from the NESFC spring (circles) and autumn (squares) bottom trawl surveys from 1963-2006 in the Gulf of Maine to Southern New England offshore region.

## Barndoor Skate GOM-SNE Offshore Only - Spring Survey

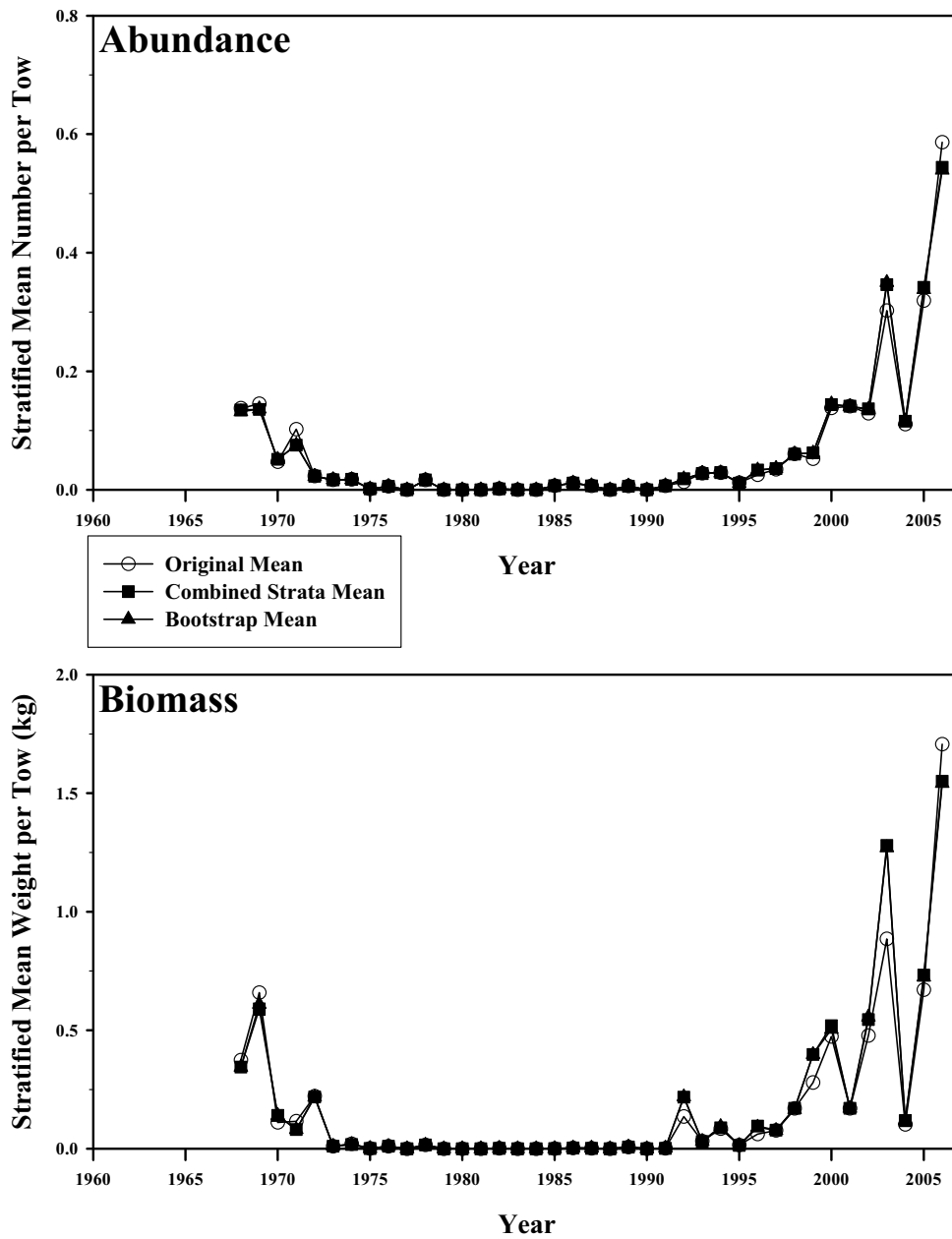


Figure B2.50. Abundance and biomass of barndoor skate from the NESFC spring bottom trawl surveys from 1968-2006 in the Gulf of Maine to Southern New England offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Barndoor Skate - Spring Survey GOM-SNE Offshore Only

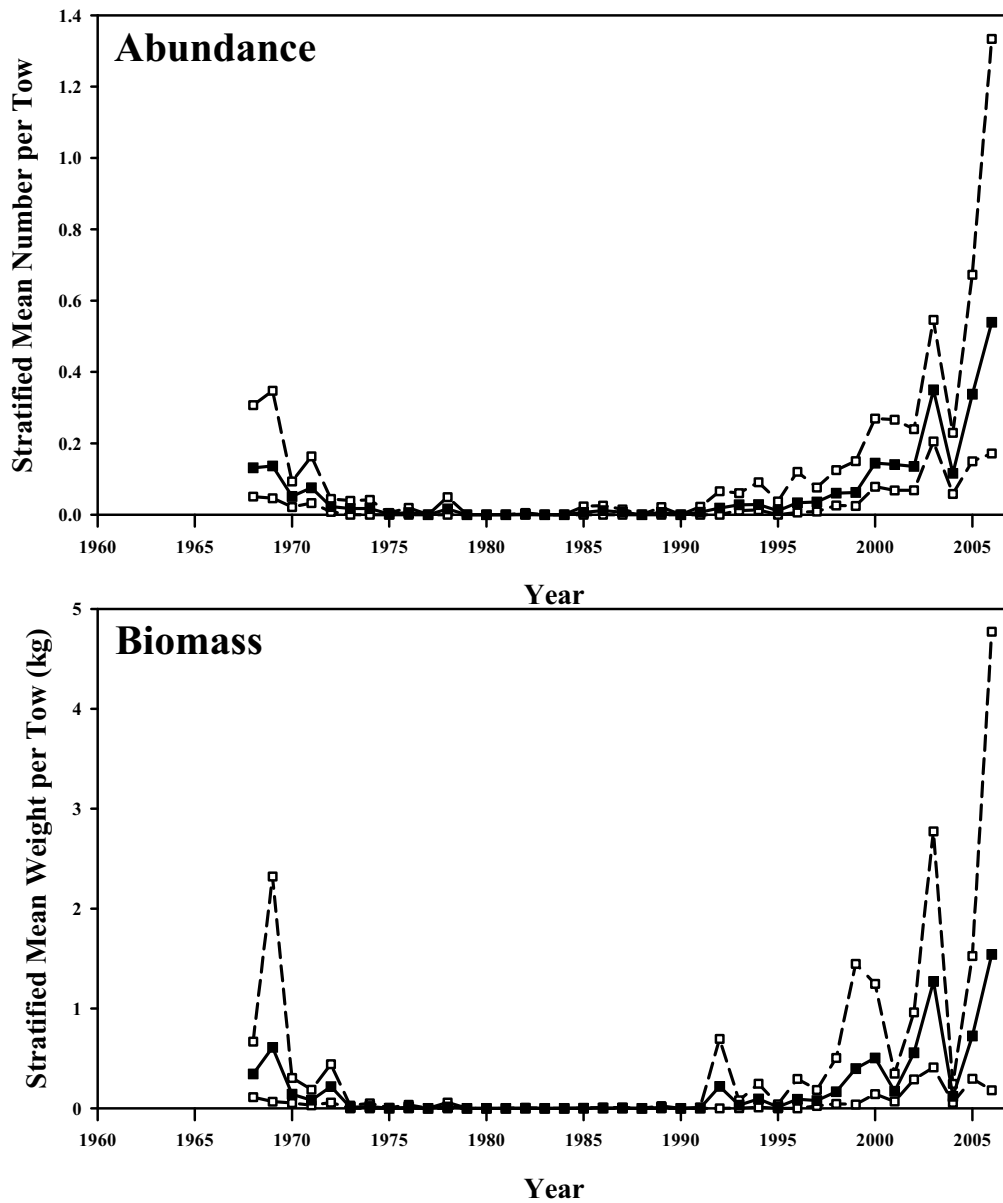


Figure B2.51. Bootstrapped abundance and biomass of barndoor skate from the NESFC spring bottom trawl survey in the Gulf of Maine to Southern New England offshore region. Mean index in solid squares, 95% confidence interval in open squares.

## Barndoor Skate GOM-SNE Offshore Only - Autumn Survey

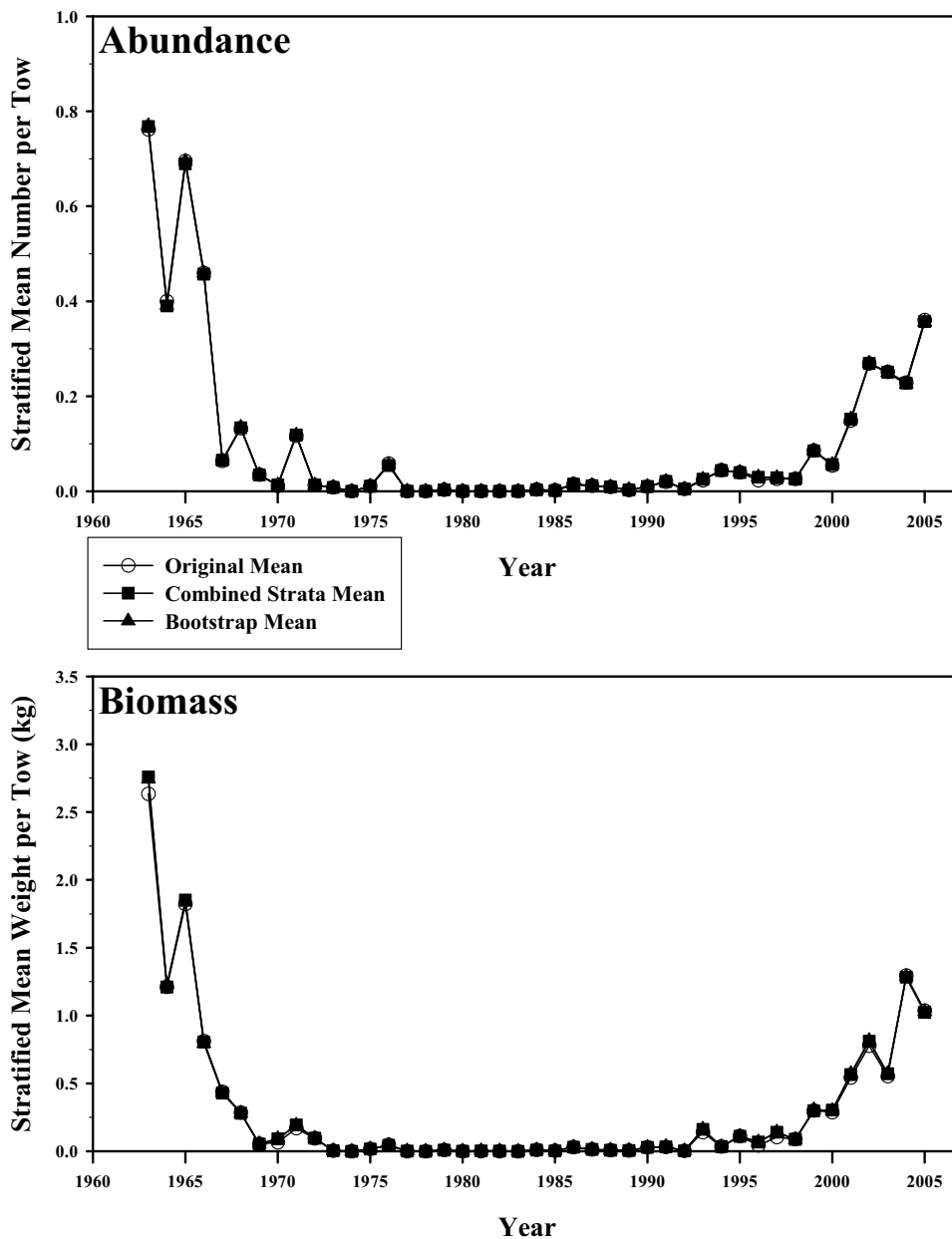


Figure B2.52. Abundance and biomass of barndoor skate from the NESFC autumn bottom trawl surveys from 1963-2006 in the Gulf of Maine to Southern New England offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Barndoor Skate - Autumn Survey GOM-SNE Offshore Only

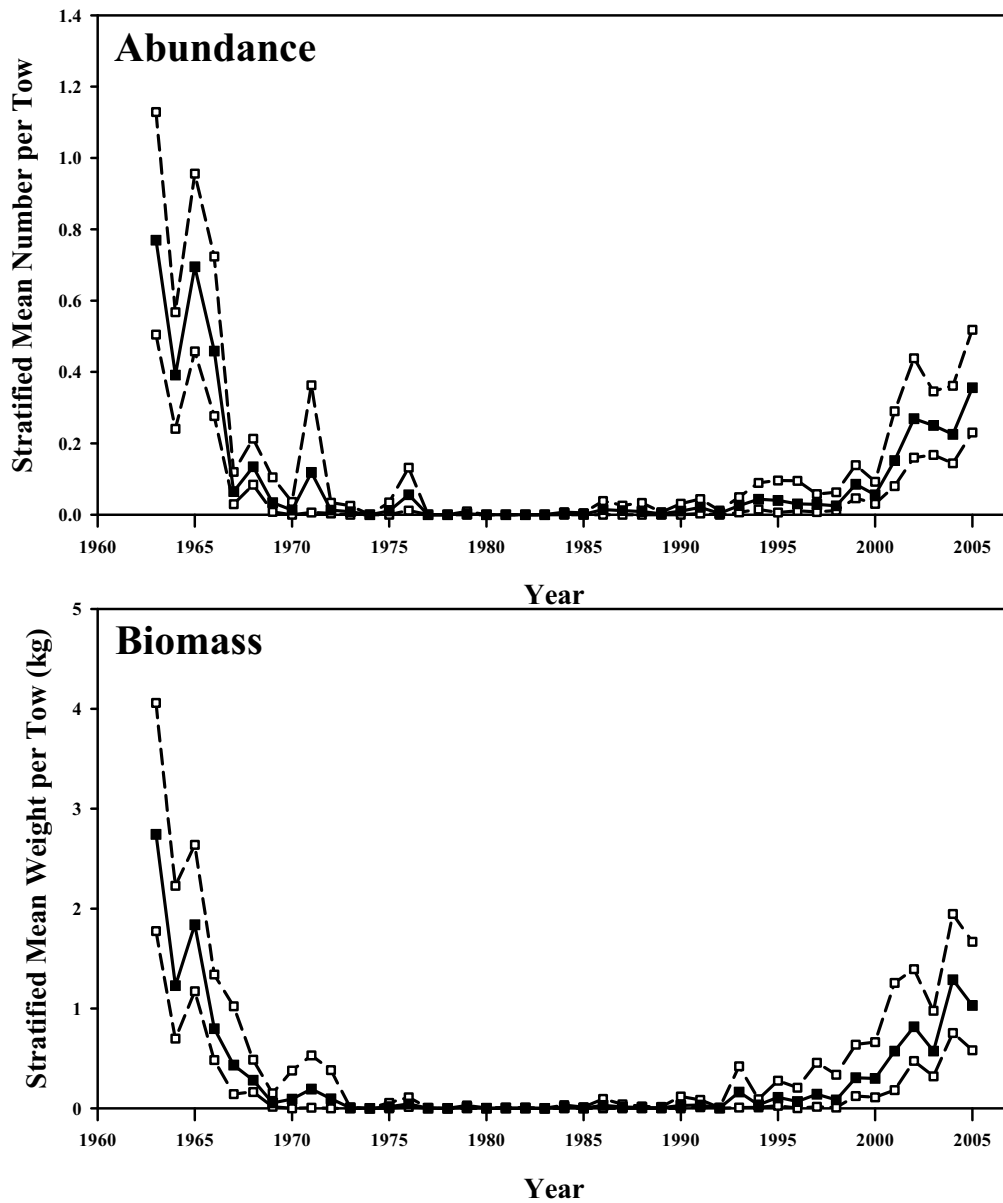


Figure B2.53. Bootstrapped abundance and biomass of barndoor skate from the NESFC autumn bottom trawl survey in the Gulf of Maine to Southern New England offshore region. Mean index in solid squares, 95% confidence interval in open squares.

# Barndoor Skate

## Percentiles of Length Composition

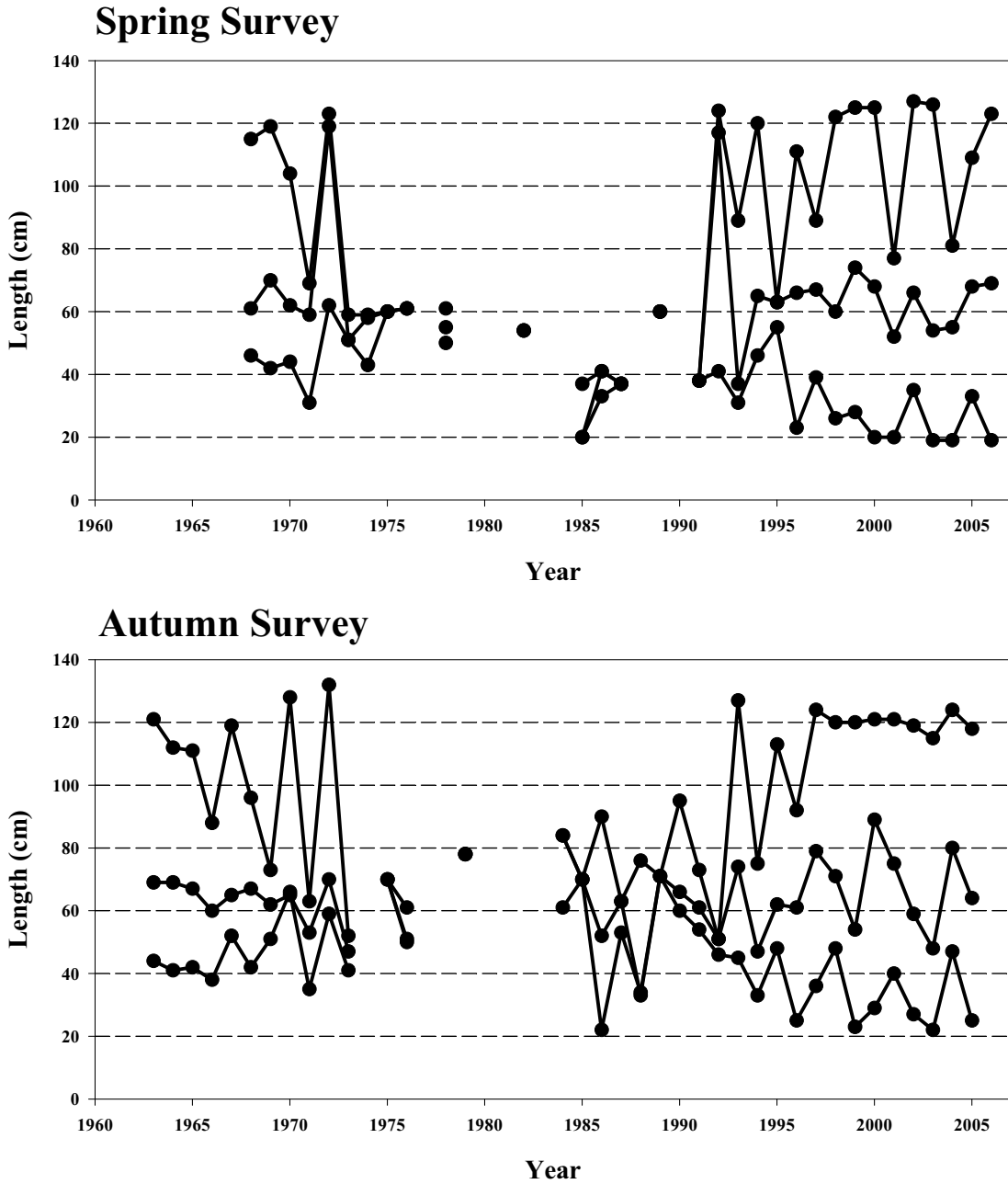


Figure B2.54. Percentiles of length composition (5, 50, and 95) of barndoor skate from the NESFC spring and autumn bottom trawl surveys from 1963-2006 in the Gulf of Maine to Southern New England offshore region.

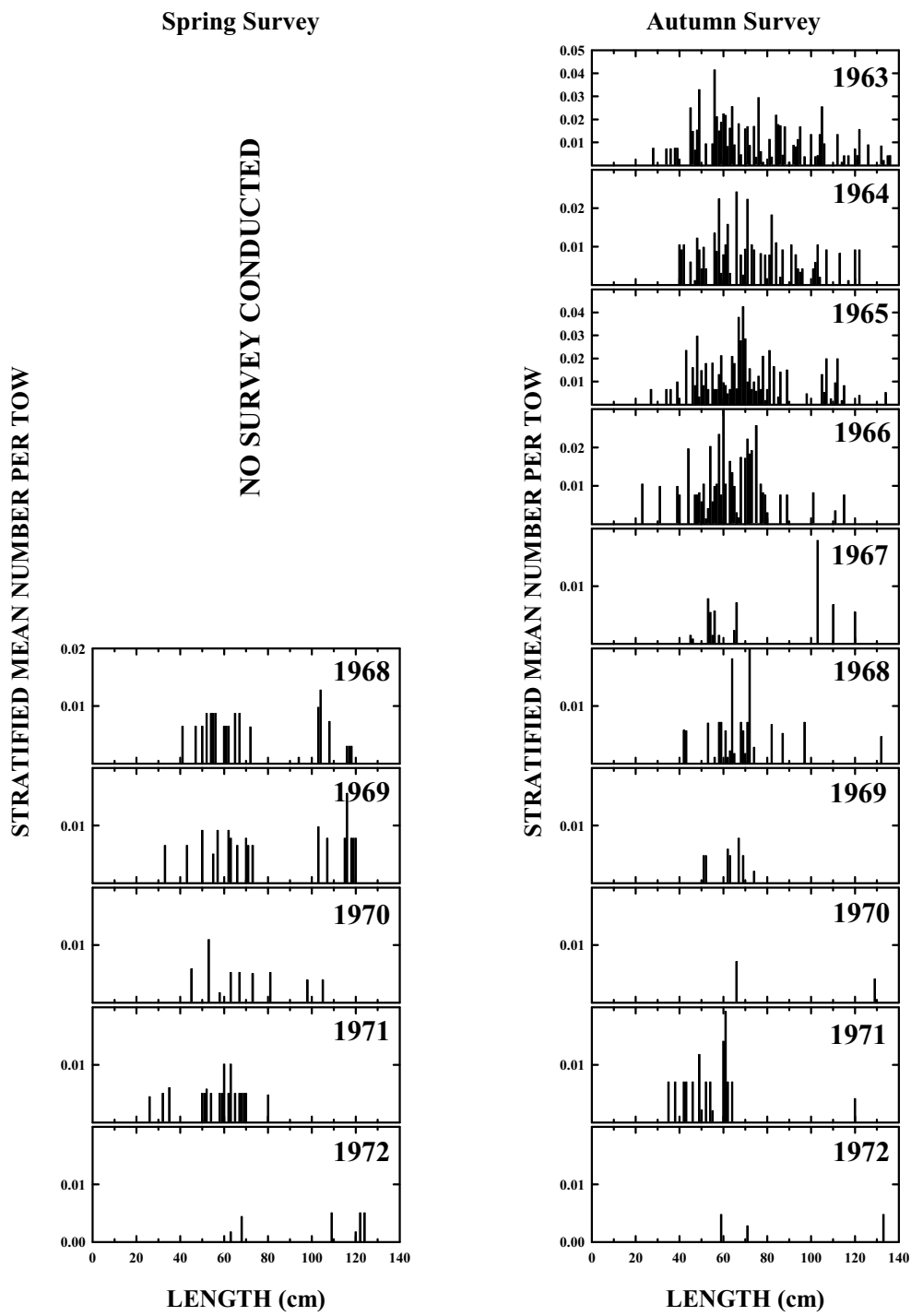


Figure B2.55. Barndoor skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1963-1972.

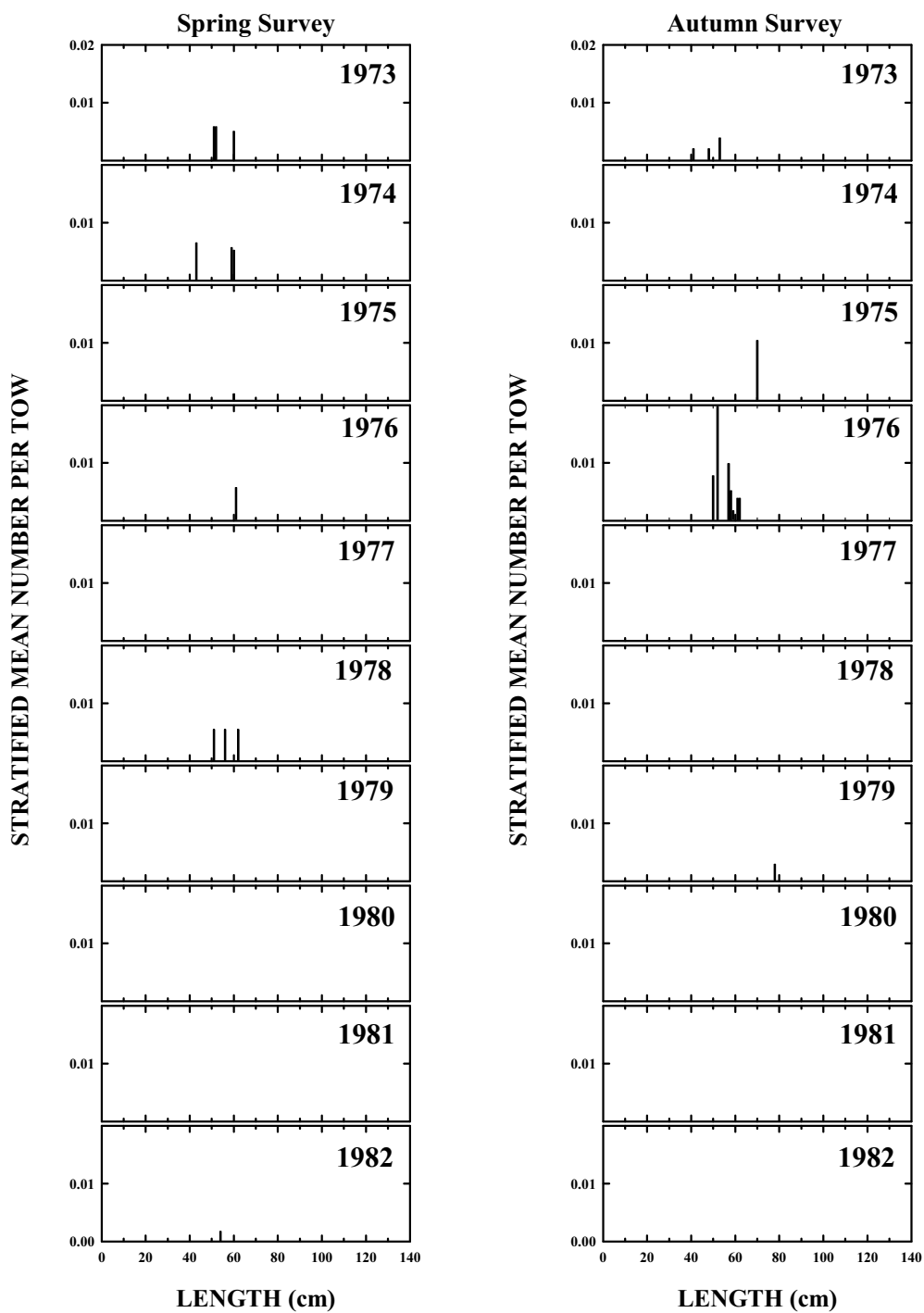


Figure B2.56. Barndoor skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1973-1982.



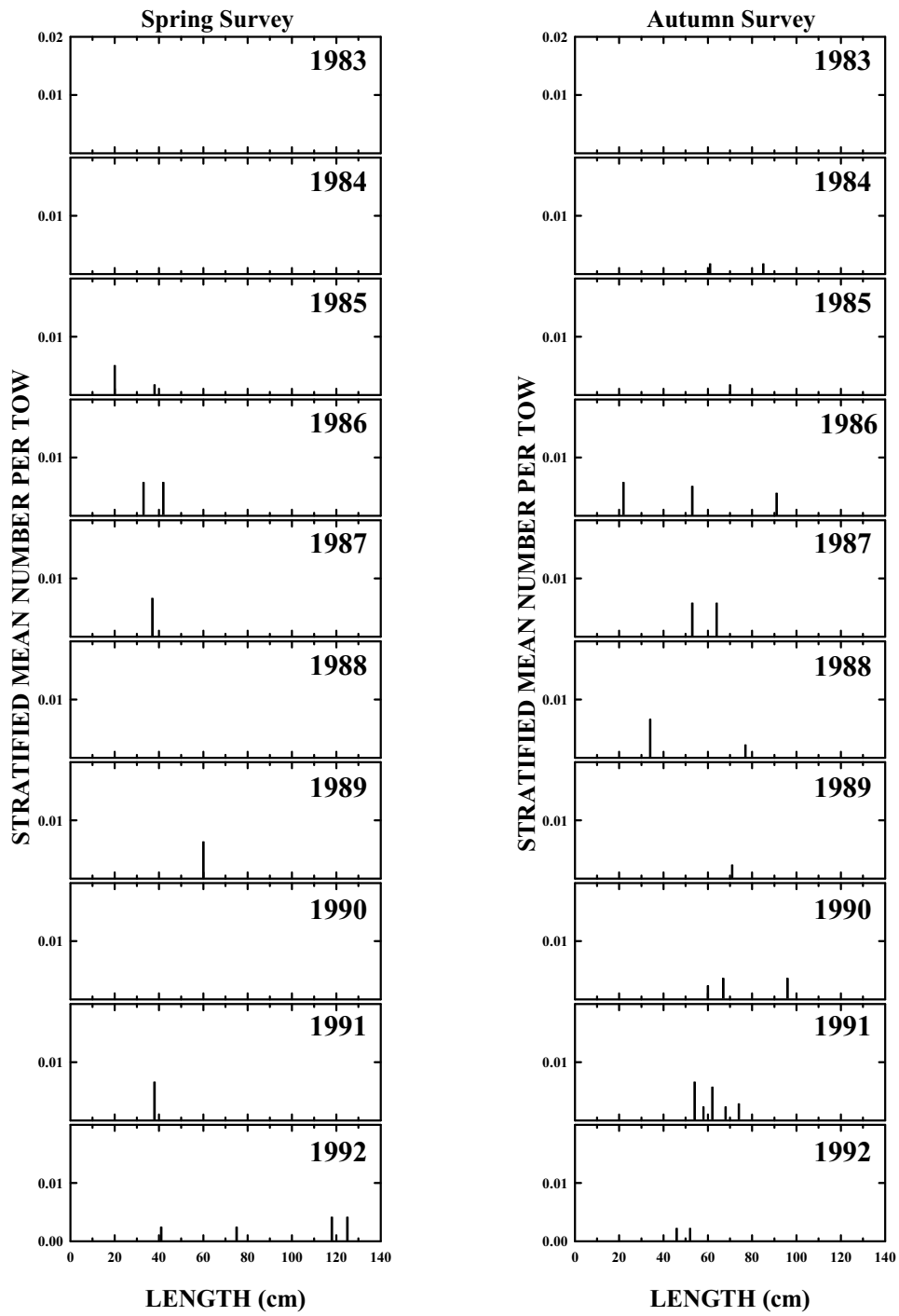


Figure B2.57. Barndoor skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1983-1992.

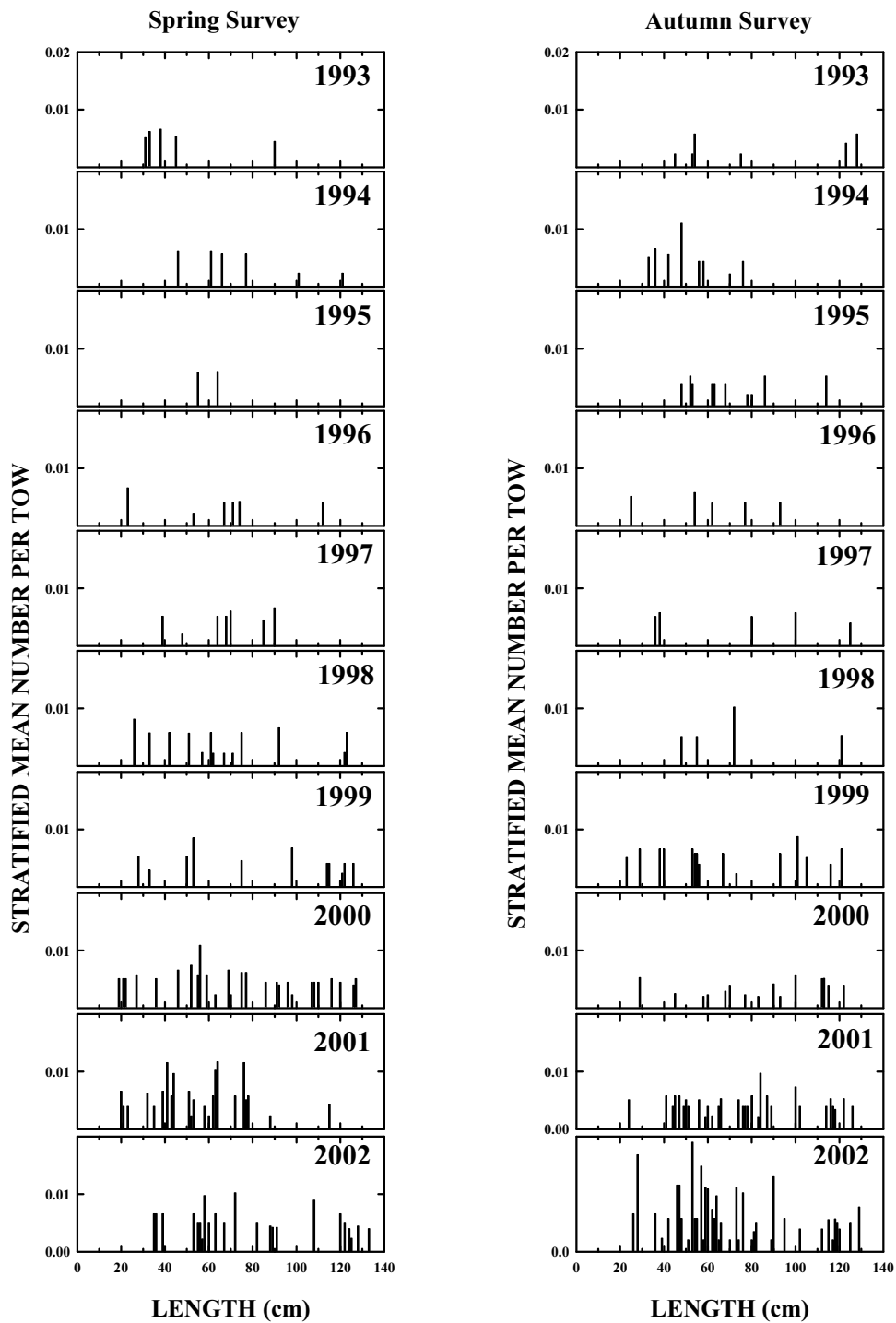


Figure B2.58. Barndoor skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1993-2002.

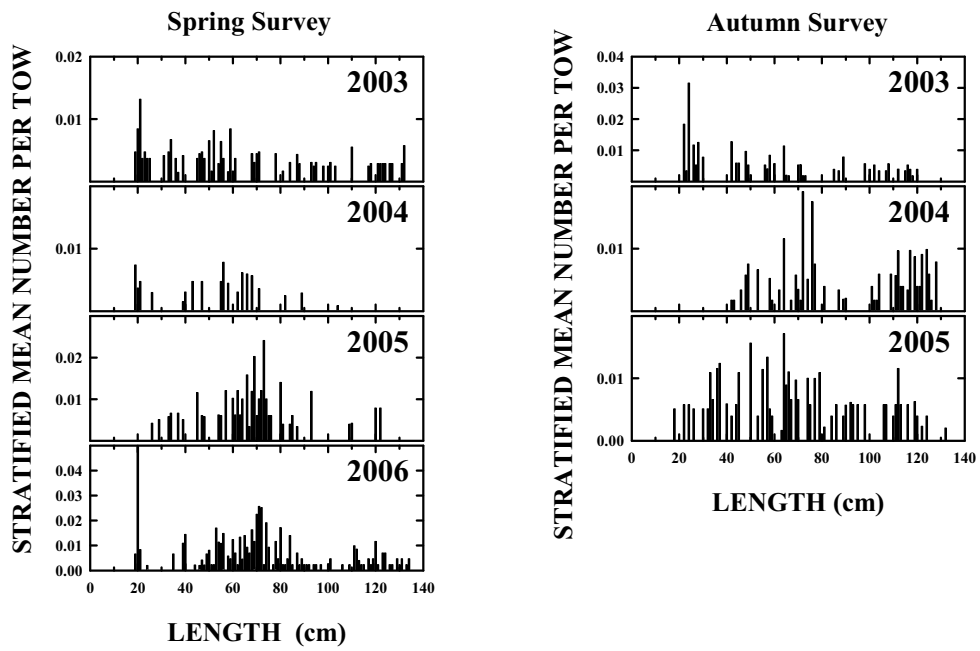


Figure B2.59. Barndoor skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 2003-2006.

## Barndoor Skate Winter Survey

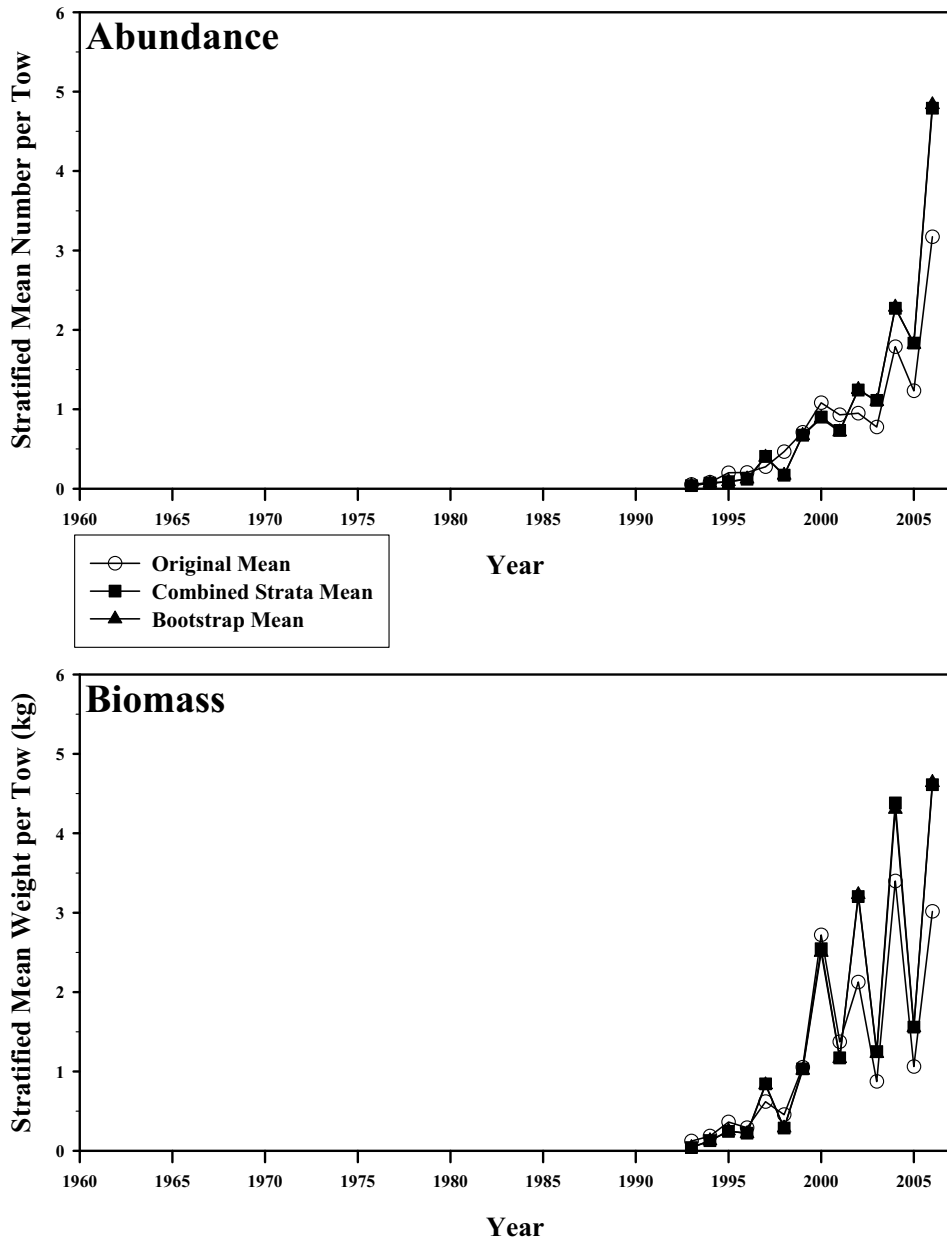


Figure B2.60. Abundance and biomass of barndoor skate from the NESFC winter bottom trawl surveys from 1993-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Barndoor Skate Winter Survey

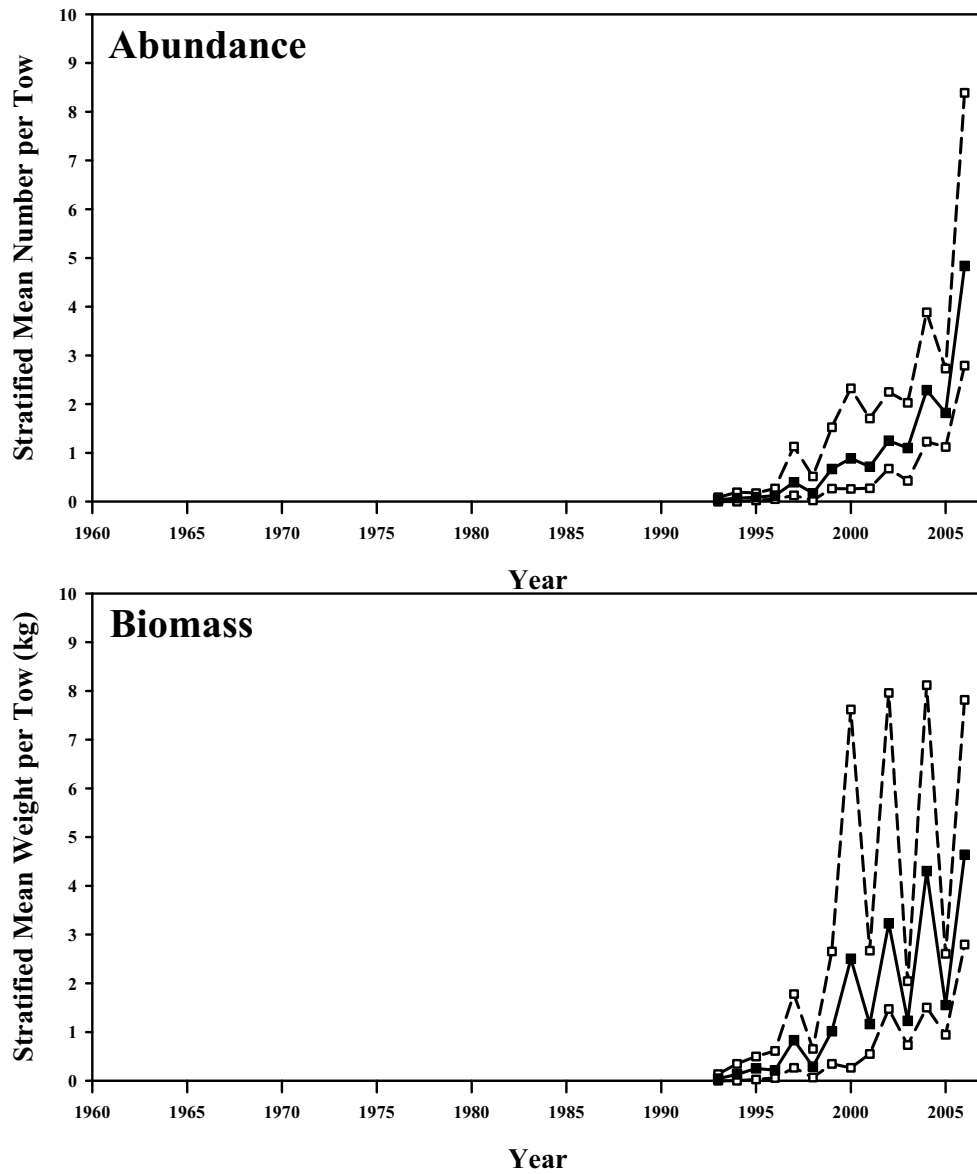


Figure B2.61. Bootstrapped abundance and biomass of barndoor skate from the NESFC winter bottom trawl survey. Mean index in solid squares, 95% confidence interval in open squares.

Winter Survey

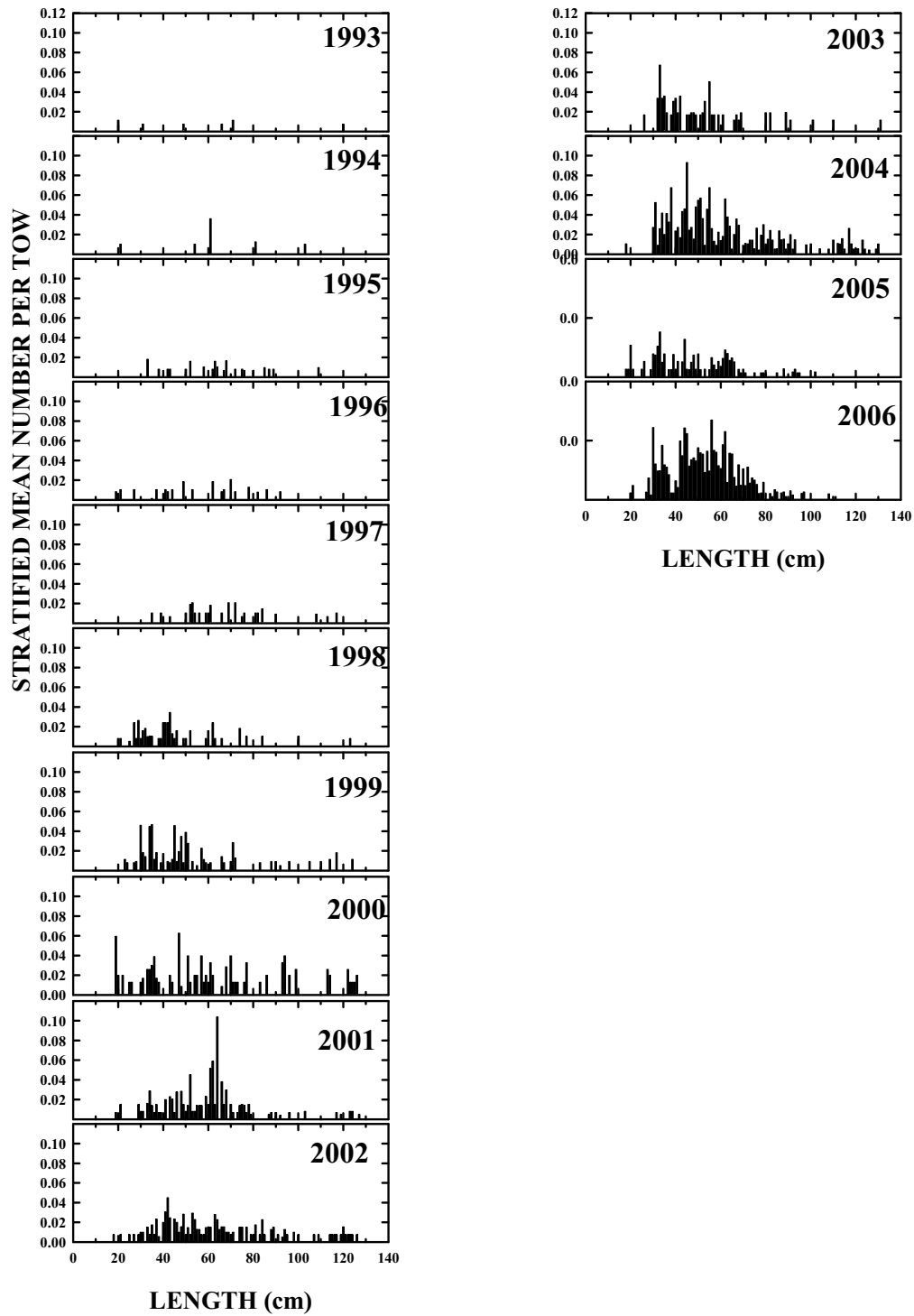


Figure B2.62. Barndoor skate length composition from the NEFSC winter flatfish surveys, 1993-2006.

## Barndoor Skate Scallop Survey

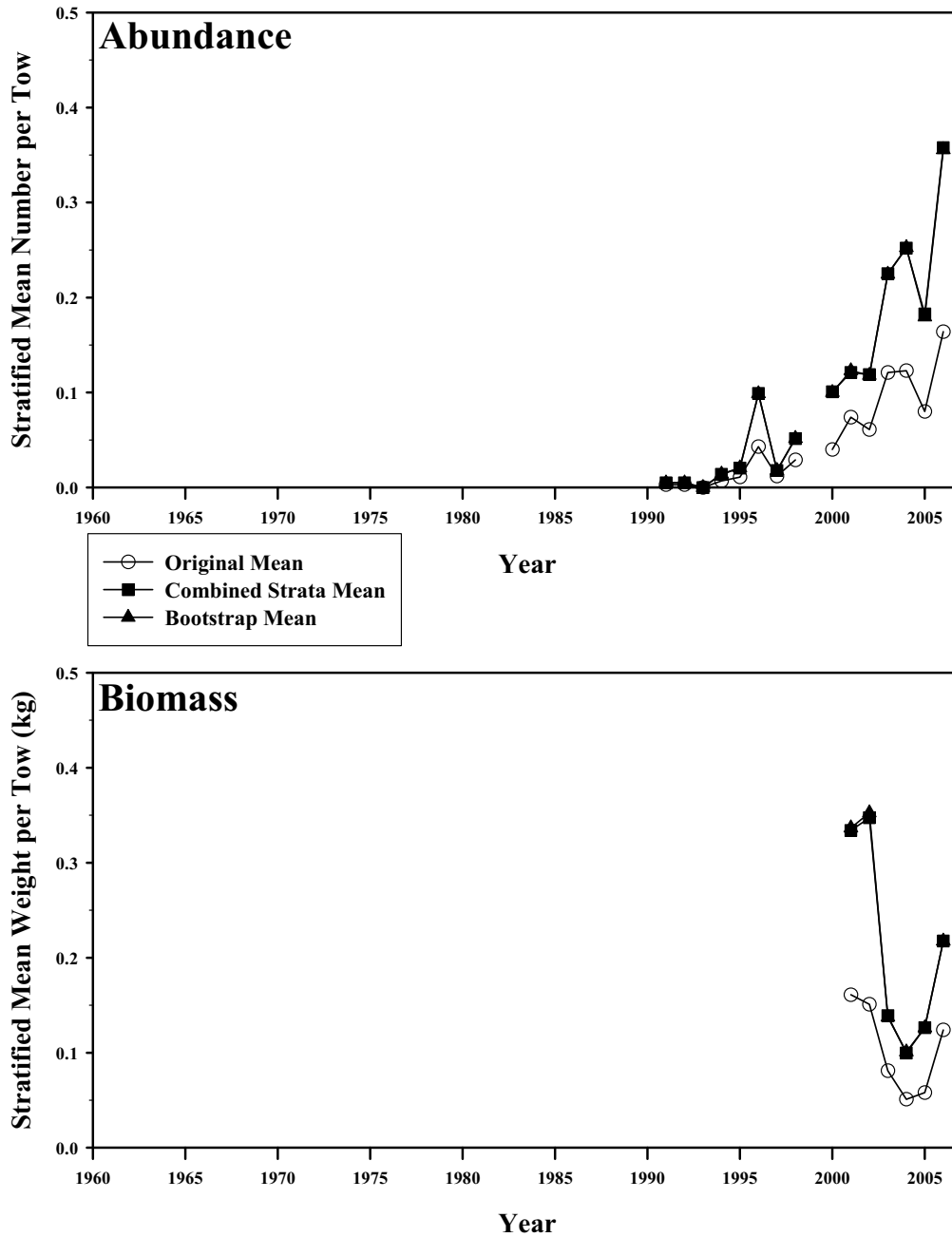


Figure B2.63. Abundance and biomass of barndoor skate from the NESFC scallop surveys from 1991-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Barndoor Skate - Scallop Survey GOM-SNE Offshore Only

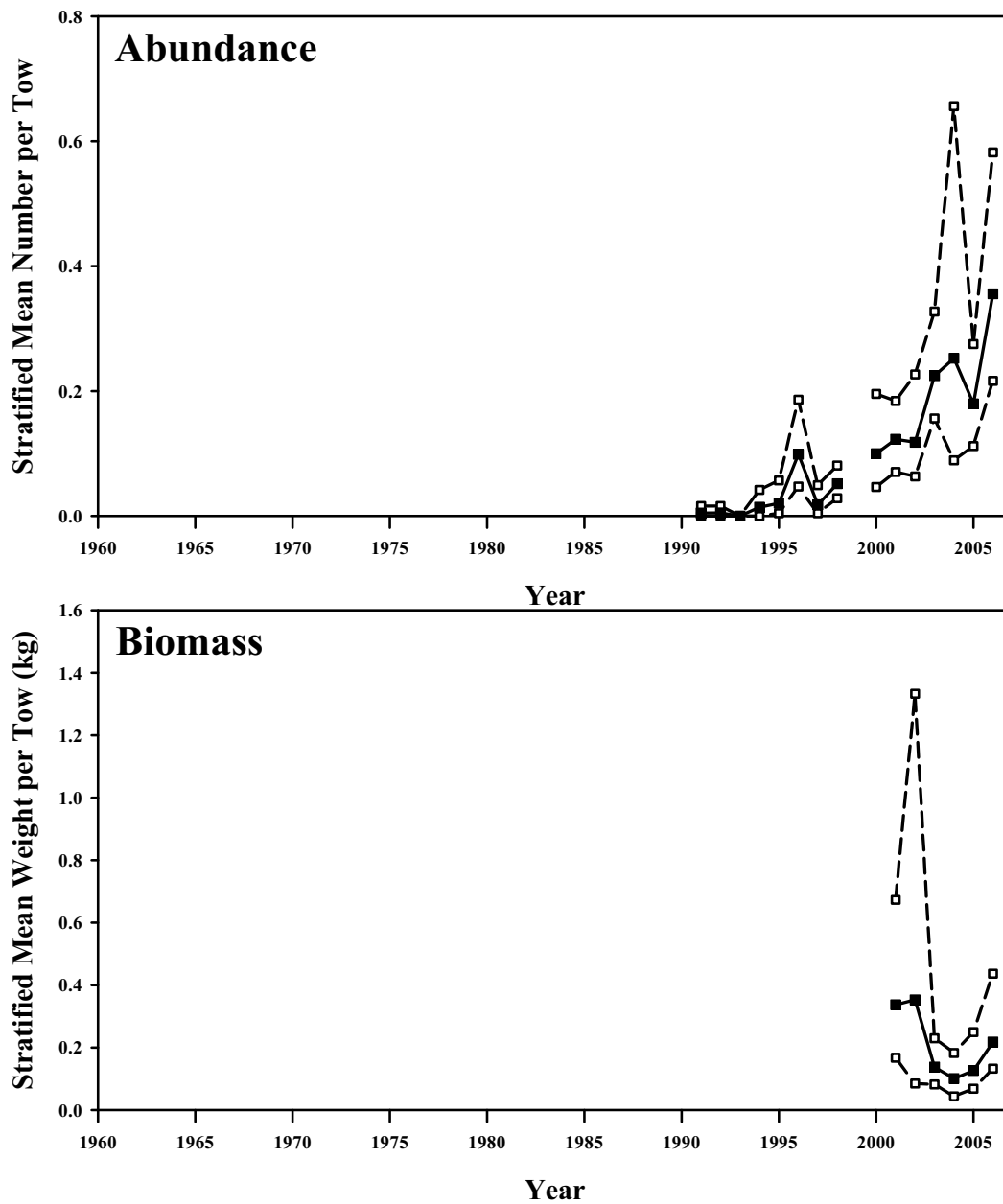
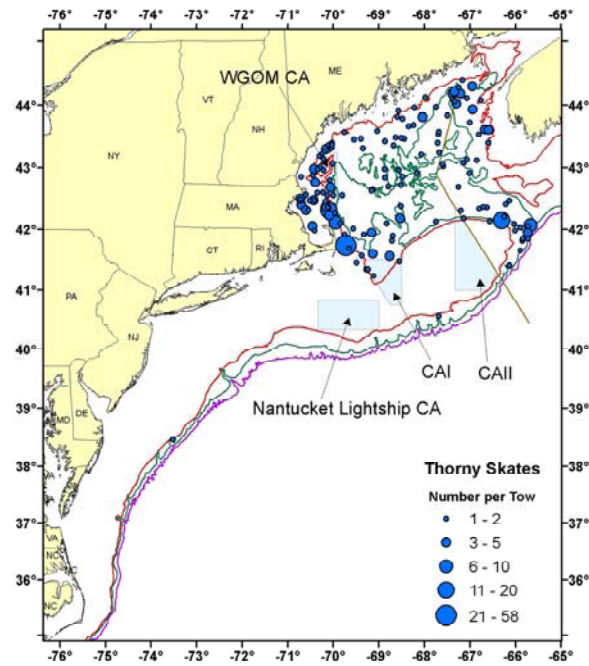
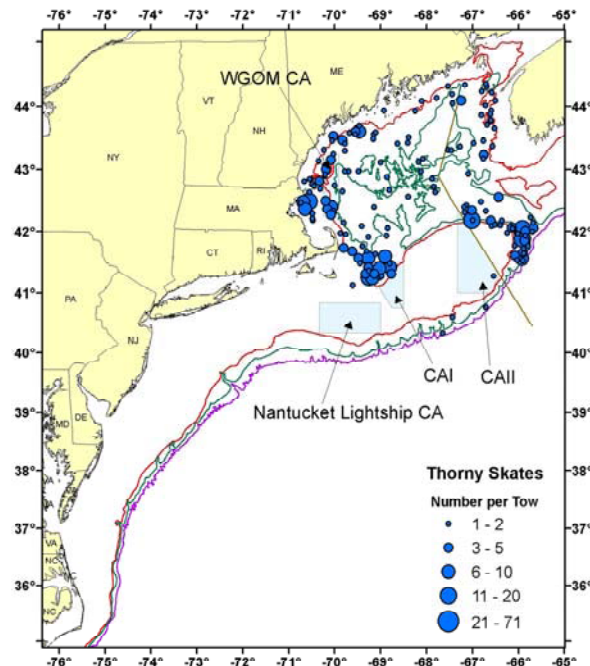


Figure B2.64. Bootstrapped abundance and biomass of barndoor skate from the NESFC scallop survey. Mean index in solid squares, 95% confidence interval in open squares.

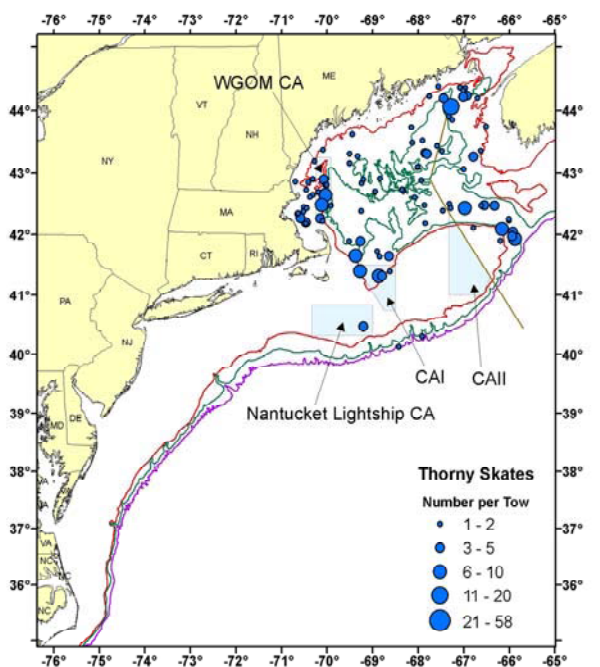




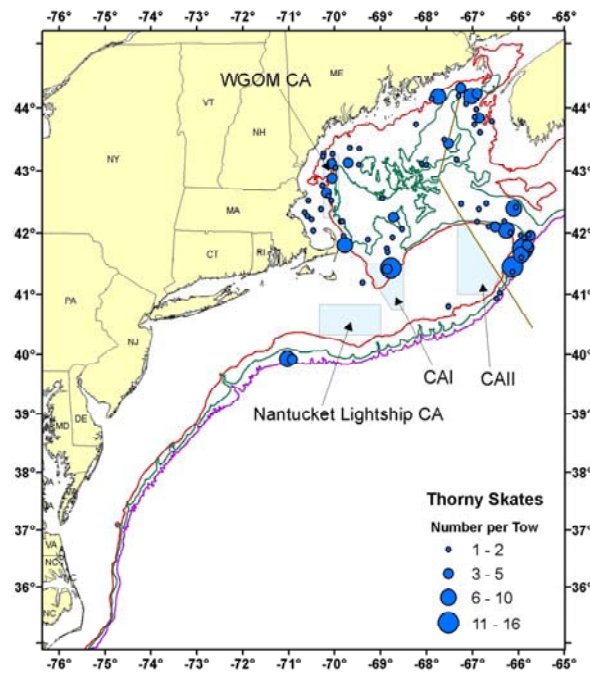
Thorny Skates from 1998-2002 NEFSC Spring Surveys



Thorny Skates from 1998-2002 NEFSC Fall Surveys

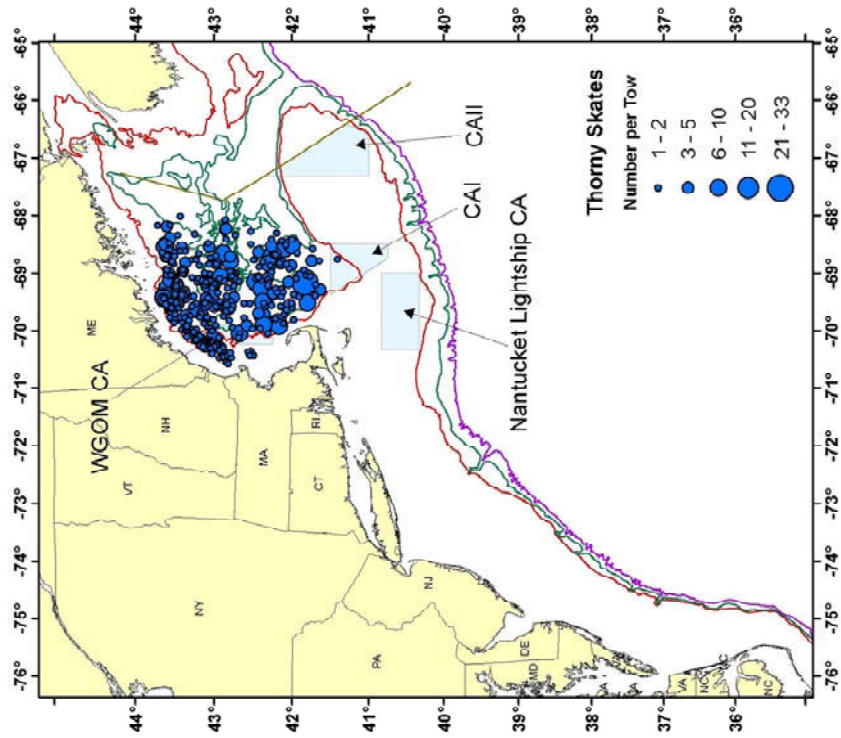


Thorny Skates from 2003-2006 NEFSC Spring Surveys

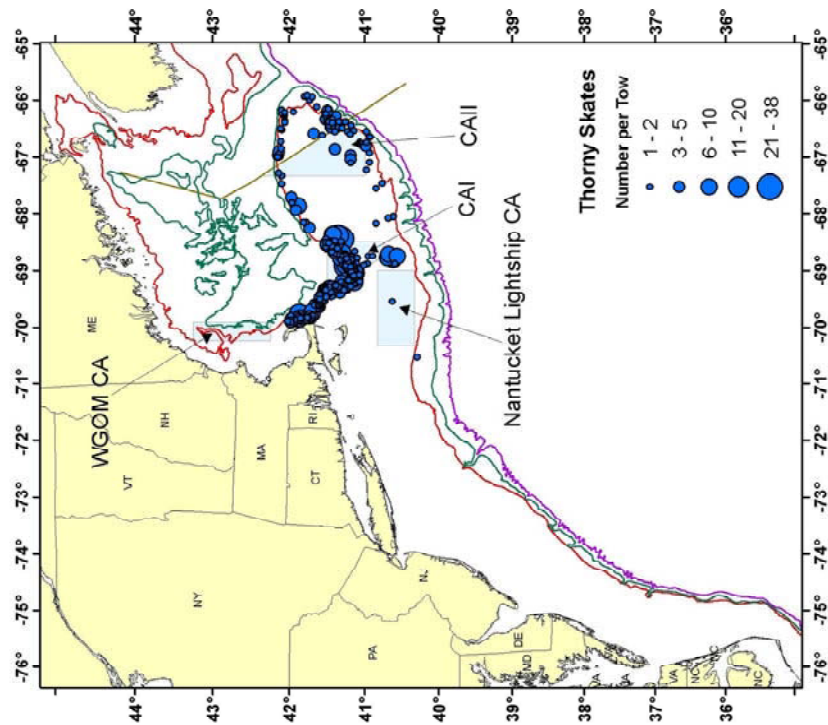


Thorny Skates from 2003-2005 NEFSC Fall Surveys

Figure B2.65. Distribution of thorny skate from the spring and autumn NEFSC surveys from 1998-2006.



Thorny Skates from 1985-2006 NEFSC Shrimp Surveys



Thorny Skates from 1985-2006 NEFSC Scallop Surveys

Figure B2.66. Distribution of thorny skate from the NEFSC scallop and shrimp surveys from 1985-2006.

## Thorny Skate GOM-SNE Offshore Only

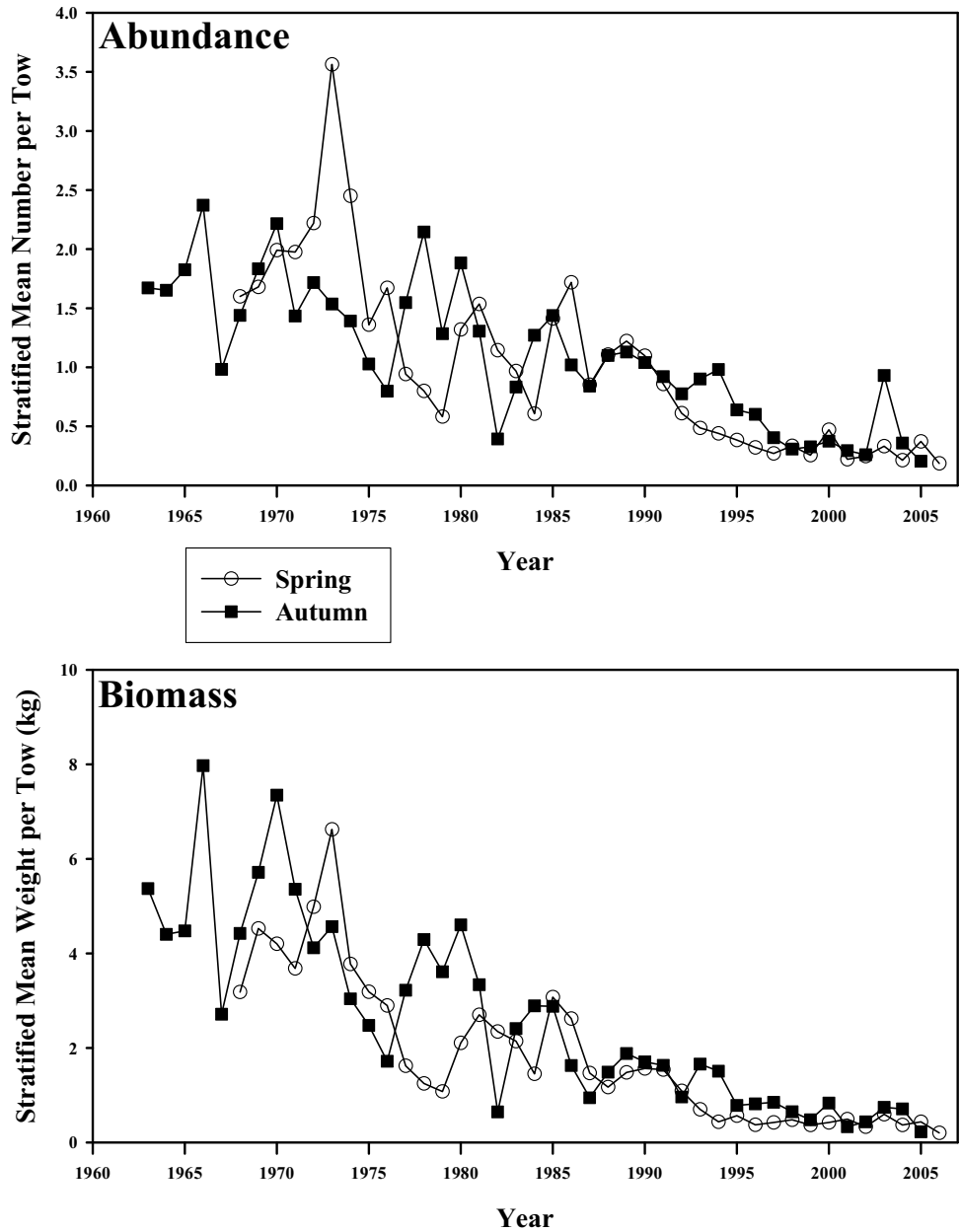


Figure B2.67. Abundance and biomass of thorny skate from the NESFC spring (circles) and autumn (squares) bottom trawl surveys from 1963-2006 in the Gulf of Maine to Southern New England offshore region.

## Thorny Skate GOM-SNE Offshore Only - Spring Survey

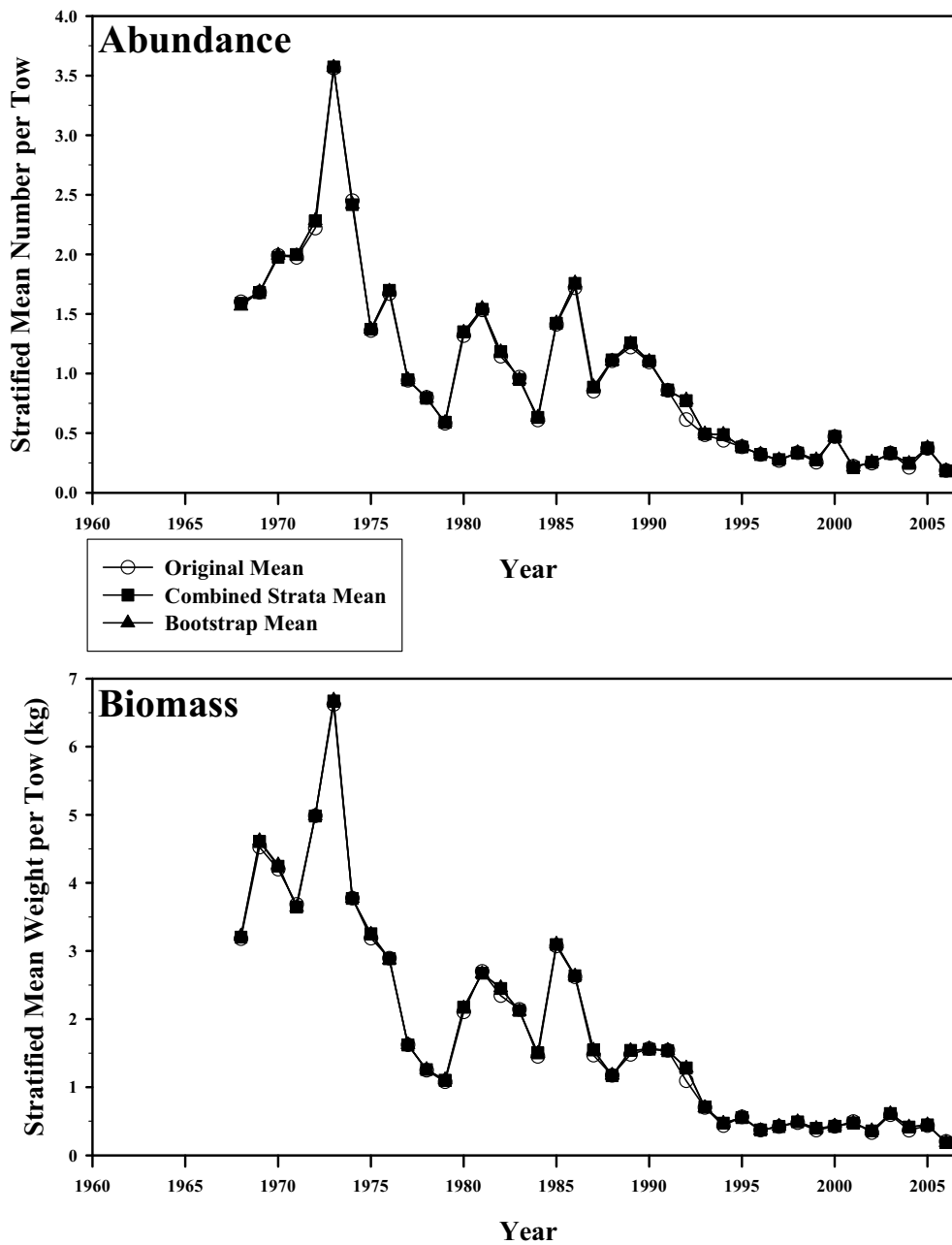


Figure B2.68. Abundance and biomass of thorny skate from the NESFC spring bottom trawl surveys from 1968-2006 in the Gulf of Maine to Southern New England offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Thorny Skate - Spring Survey GOM-SNE Offshore Only

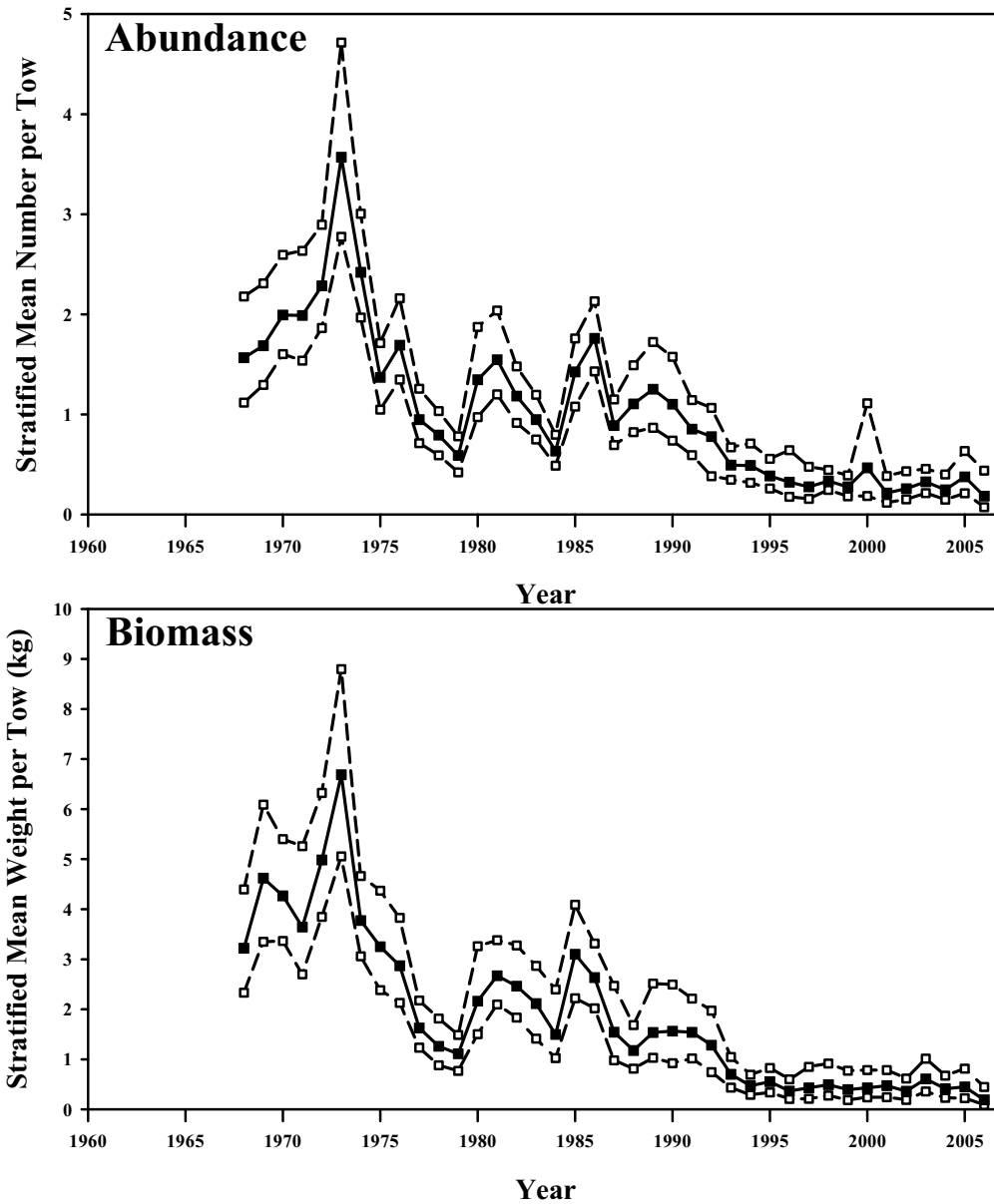


Figure B2.69. Bootstrapped abundance and biomass of thorny skate from the NESFC spring bottom trawl survey in the Gulf of Maine to Southern New England offshore region. Mean index in solid squares, 95% confidence interval in open squares.

## Thorny Skate GOM-SNE Offshore Only - Autumn Survey

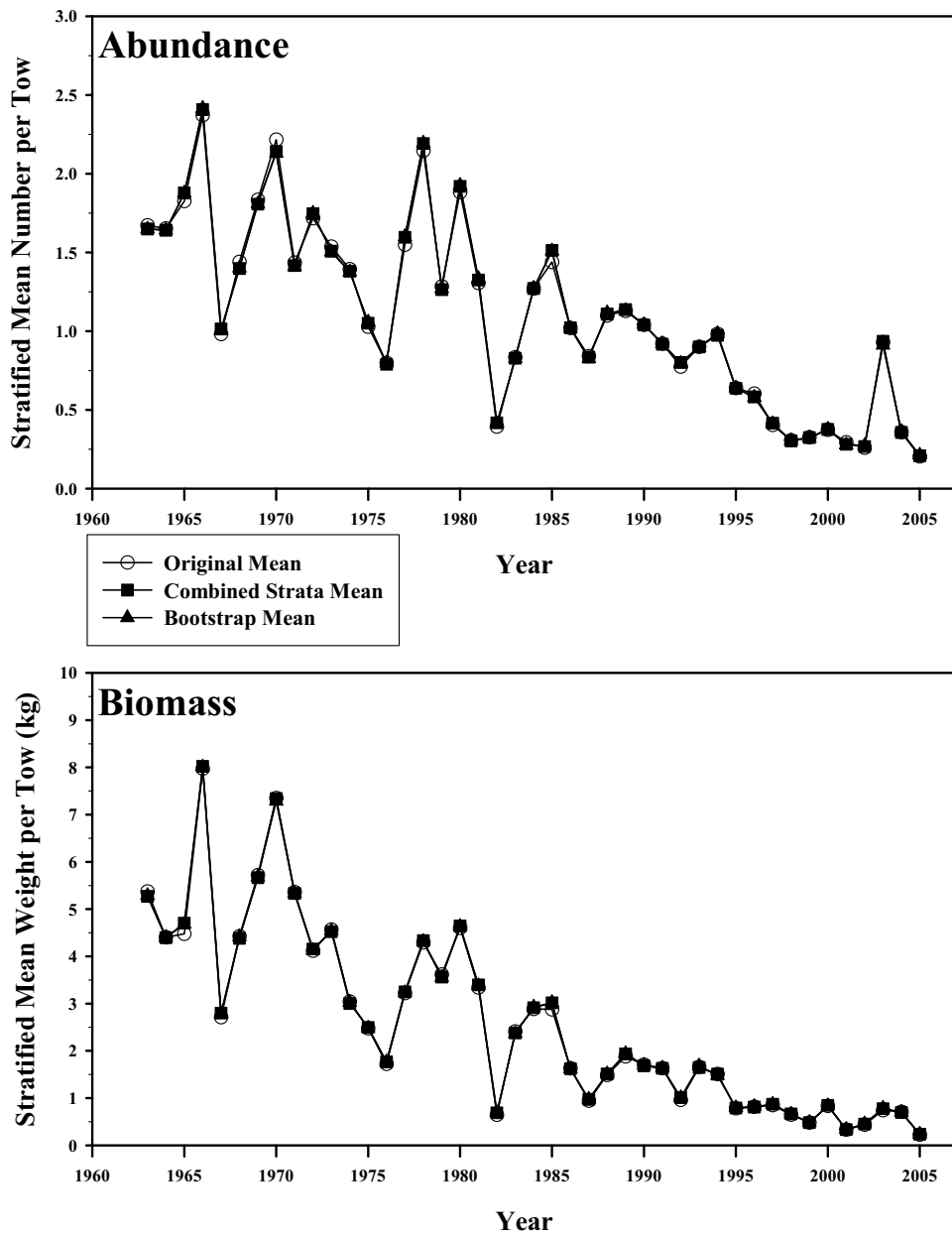


Figure B2.70. Abundance and biomass of thorny skate from the NESFC autumn bottom trawl surveys from 1968-2006 in the Gulf of Maine to Southern New England offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Thorny Skate - Autumn Survey GOM-SNE Offshore Only

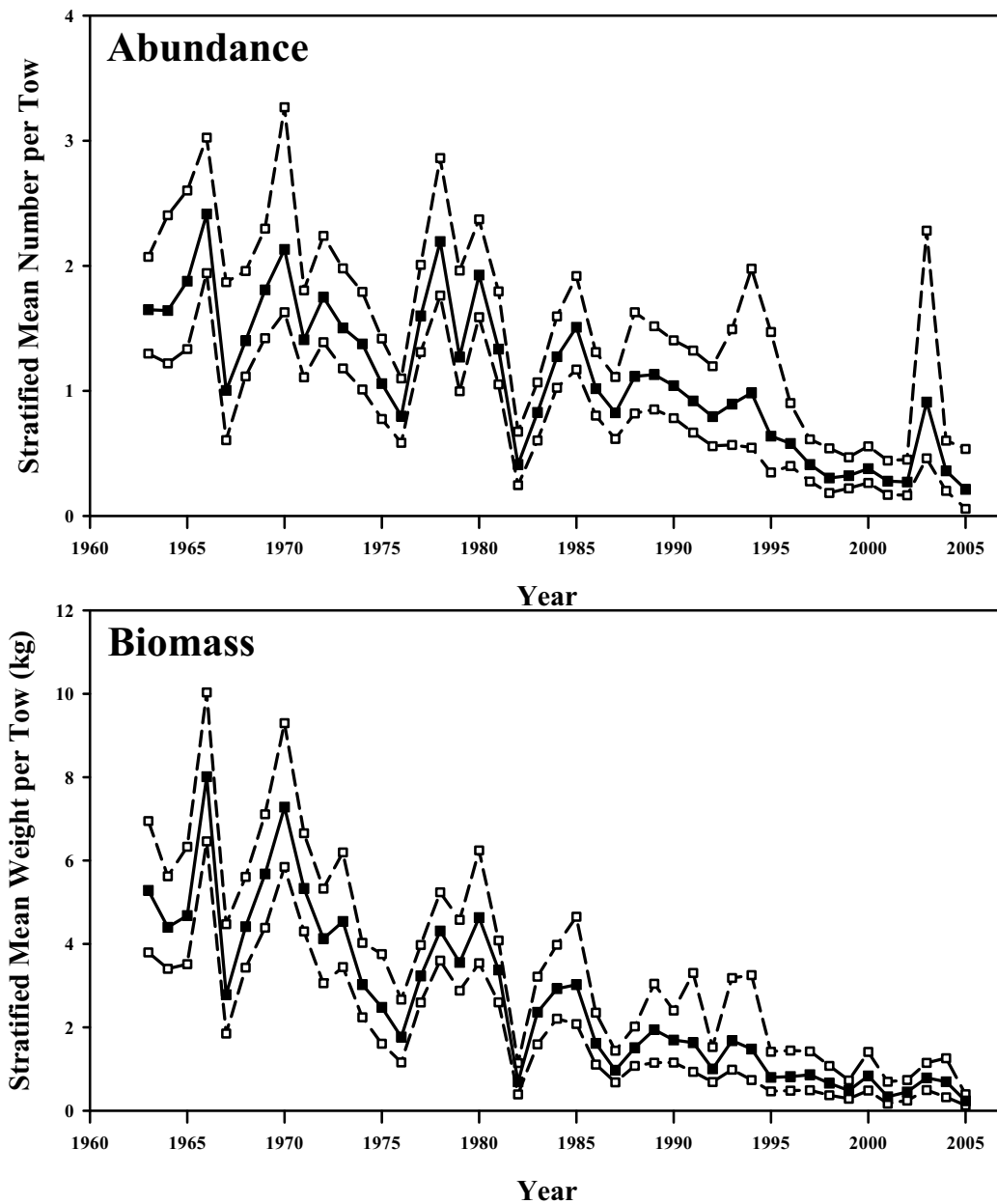
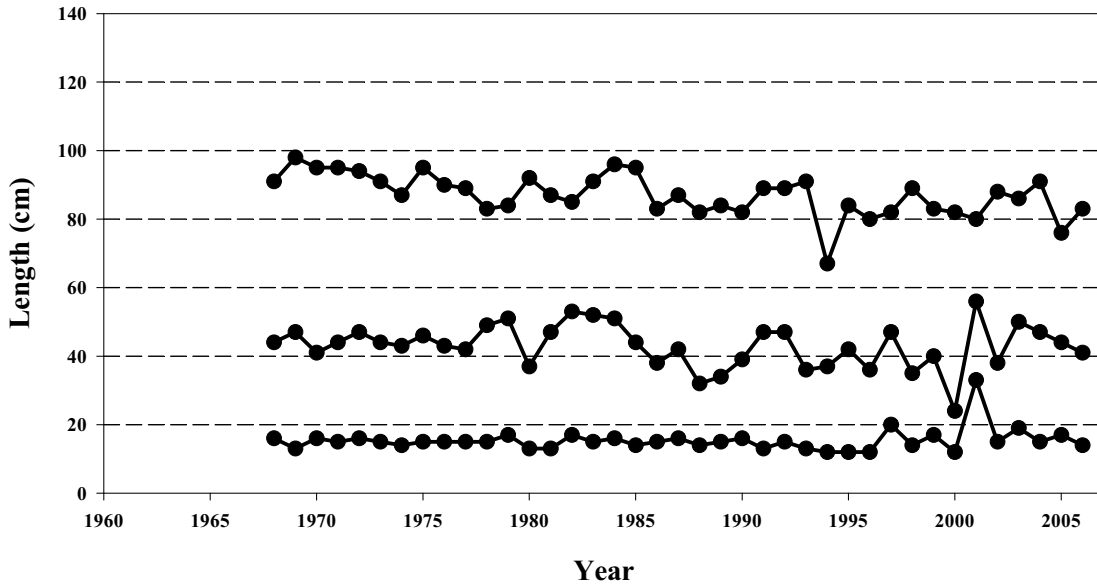


Figure B2.71. Bootstrapped abundance and biomass of thorny skate from the NESFC autumn bottom trawl survey in the Gulf of Maine to Southern New England offshore region. Mean index in solid squares, 95% confidence interval in open squares.

# Thorny Skate: GOM-SNE Offshore Percentiles of Length Composition

## Spring Survey



## Autumn Survey

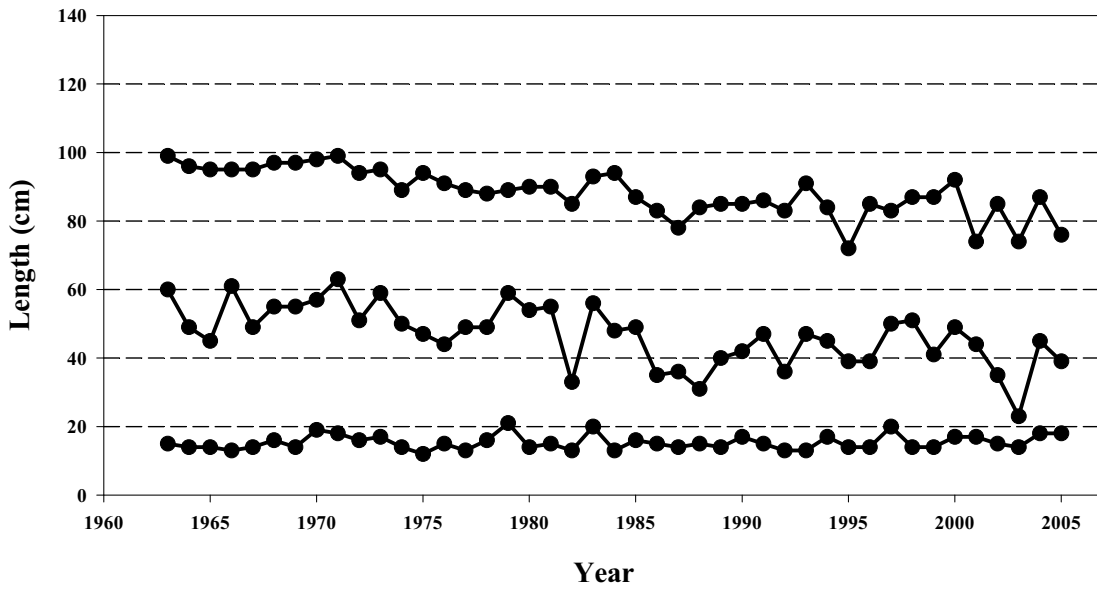


Figure B2.72. Percentiles of length composition (5, 50, and 95) of thorny skate from the NESFC spring and autumn bottom trawl surveys from 1963-2006 in the Gulf of Maine to Southern New England offshore region.



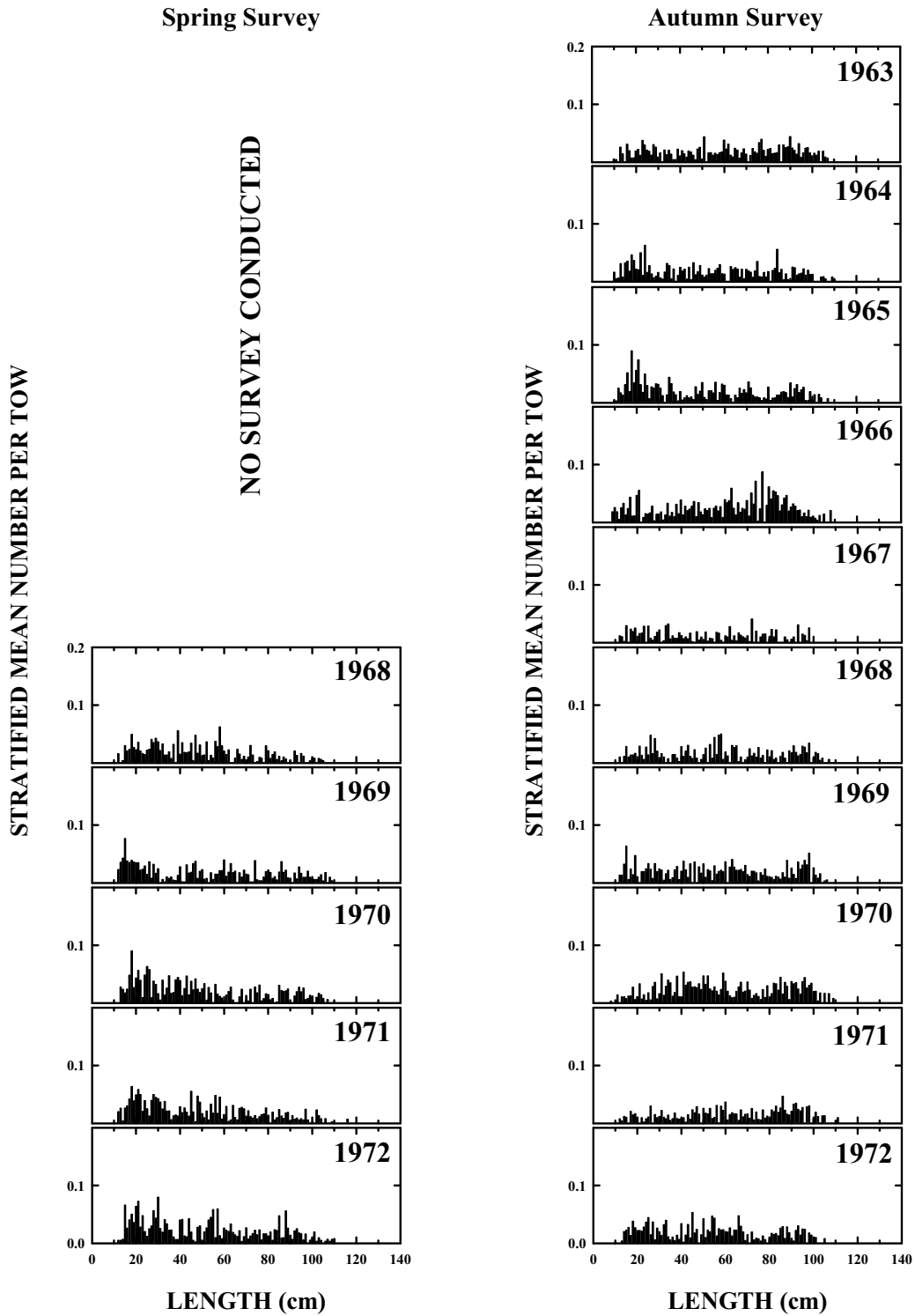


Figure B2.73. Thorny skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1963-1972.

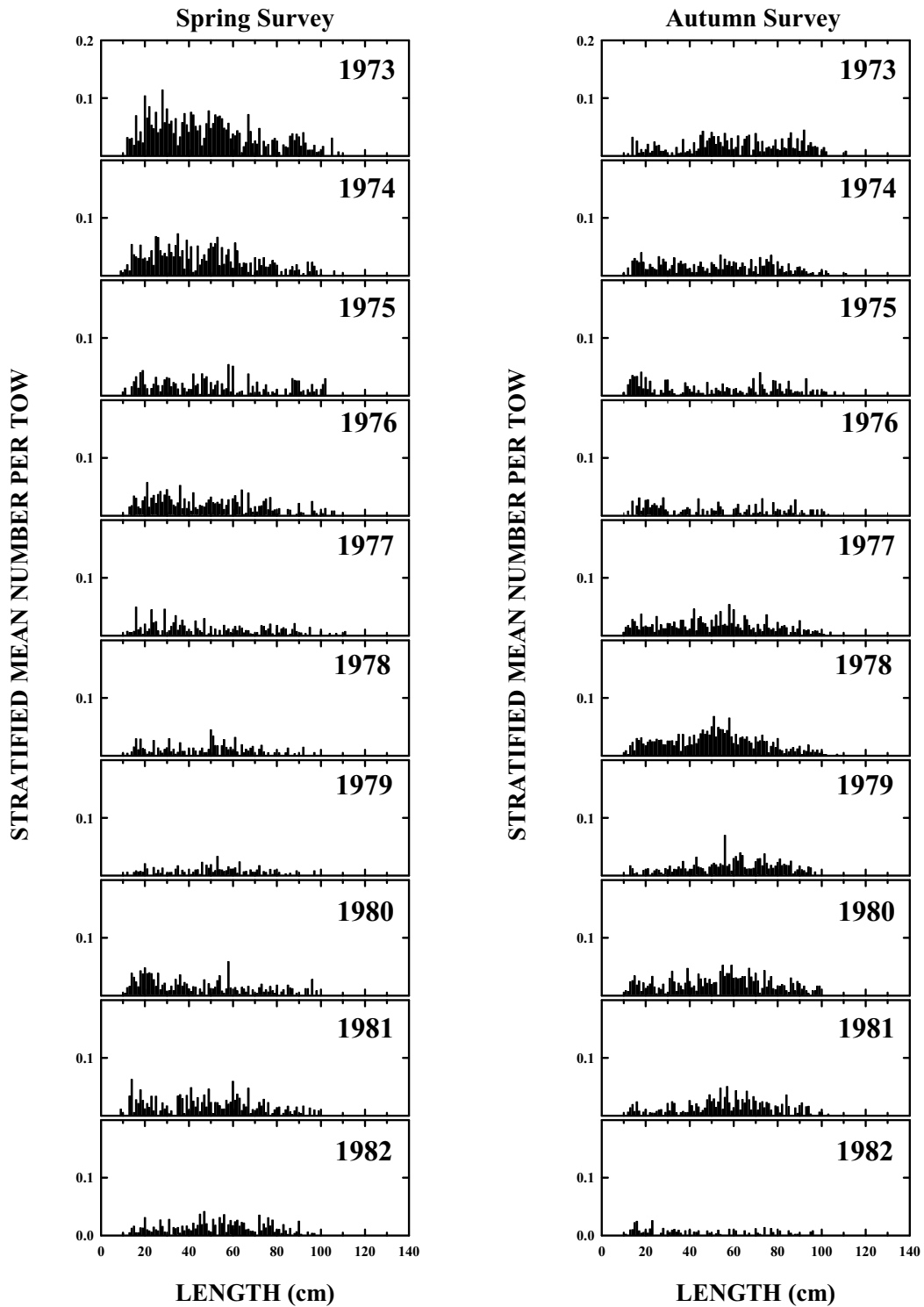


Figure B2.74. Thorny skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1973-1982.

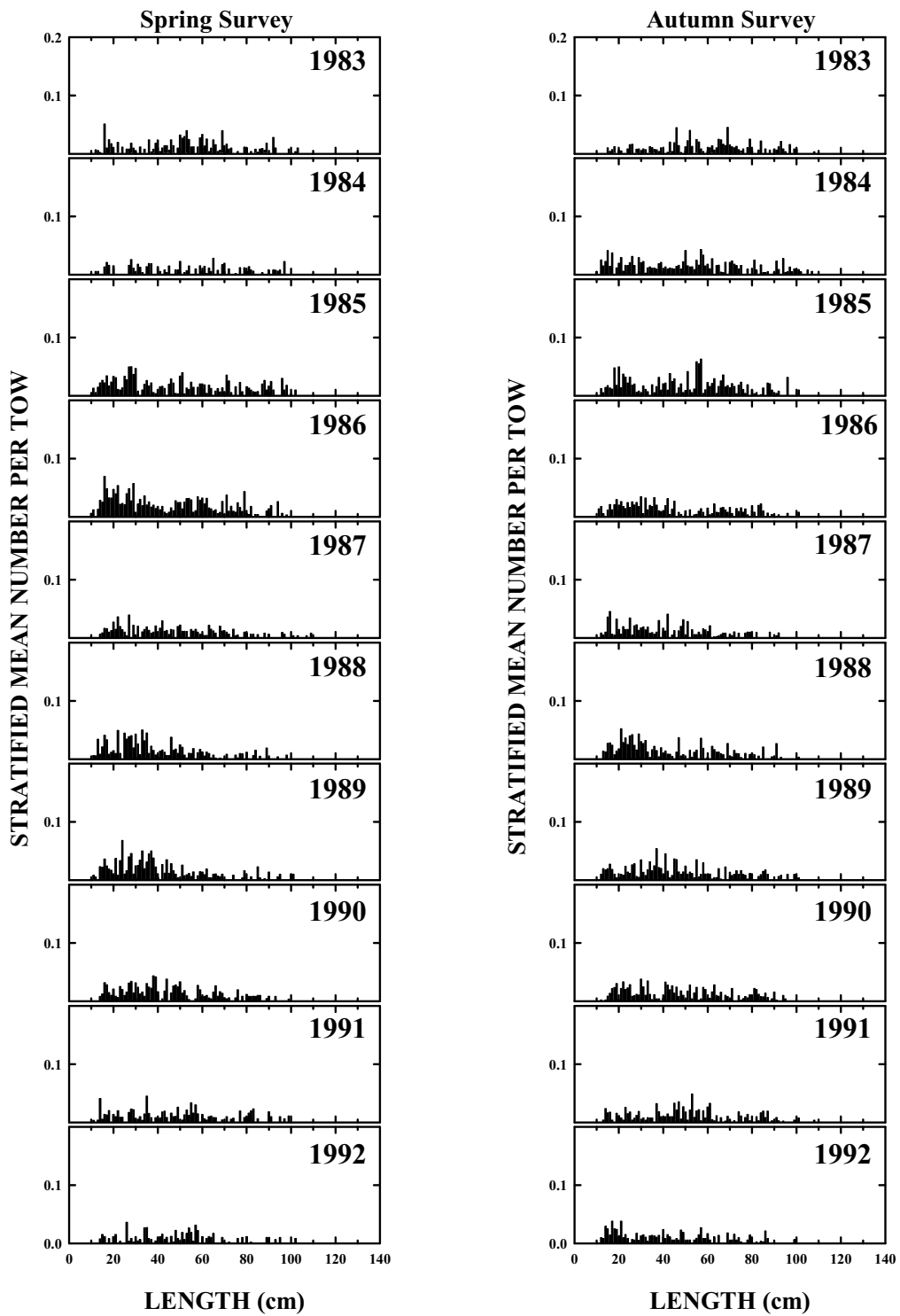


Figure B2.75. Thorny skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1983-1992.

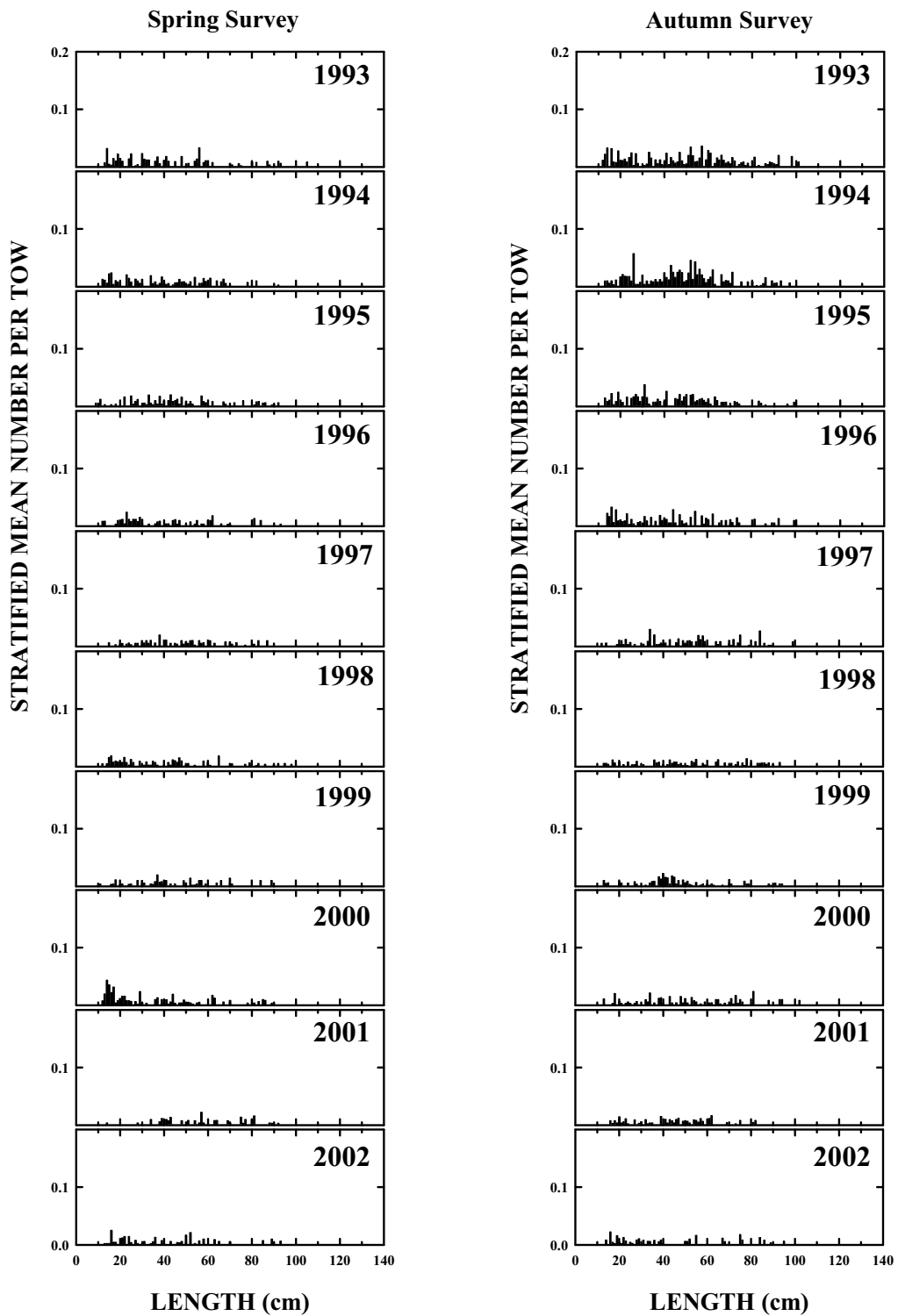


Figure B2.76. Thorny skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1993-2002.

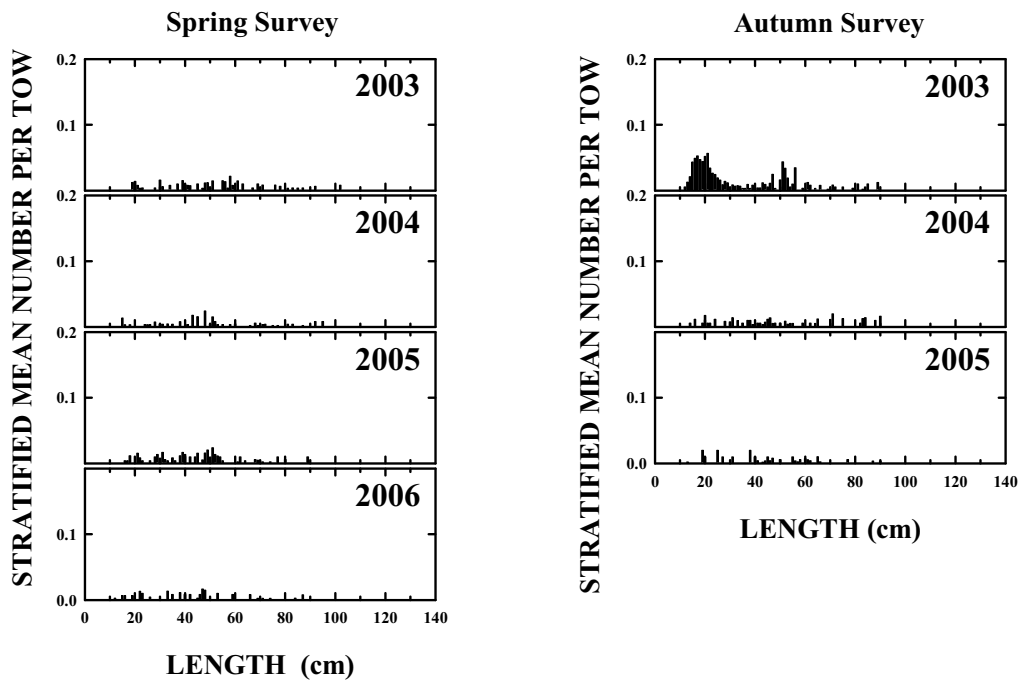


Figure B2.77. Thorny skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 2003-2006.

## Thorny Skate Scallop Survey

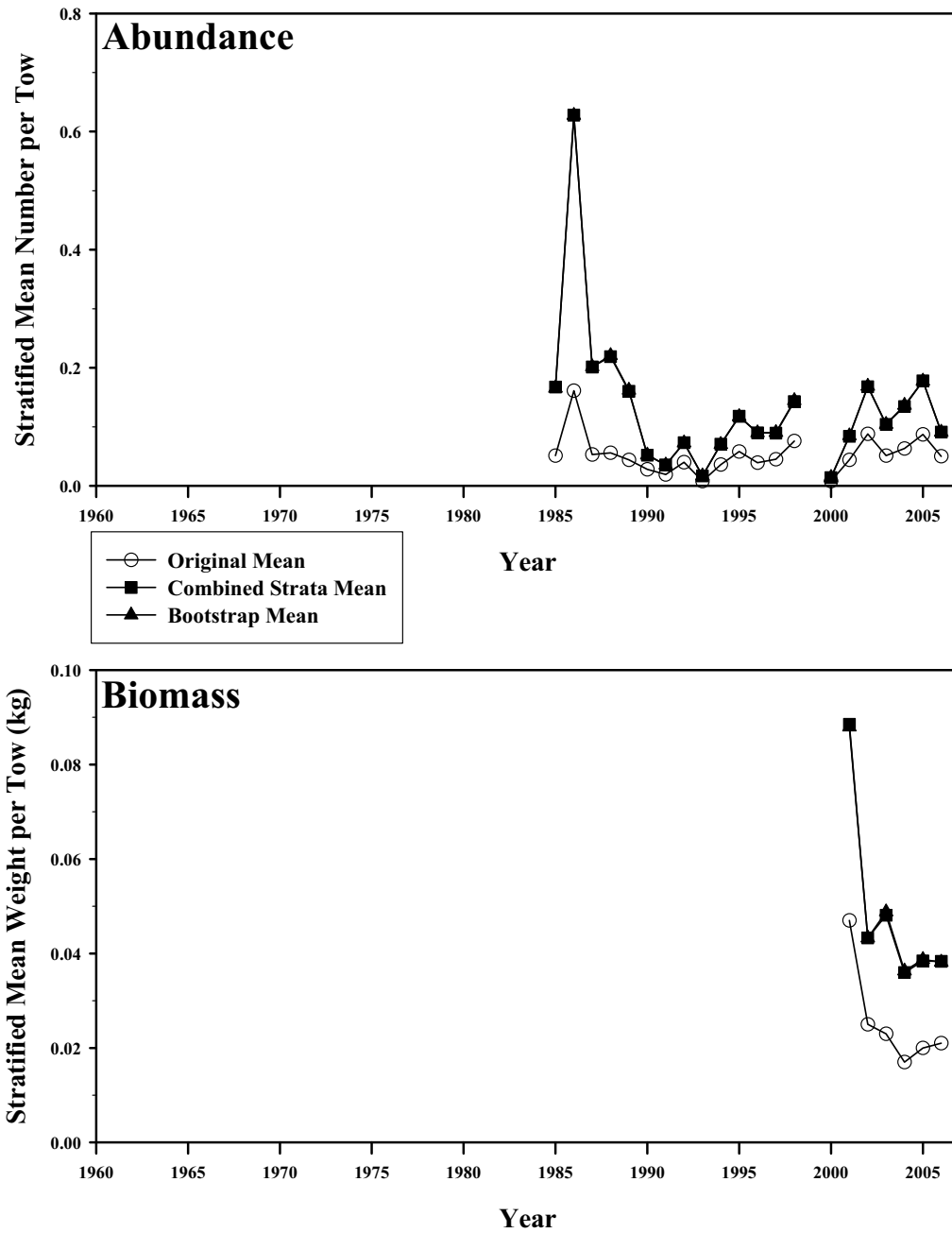


Figure B2.78. Abundance and biomass of thorny skate from the NESFC scallop surveys from 1985-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Thorny Skate Scallop Survey

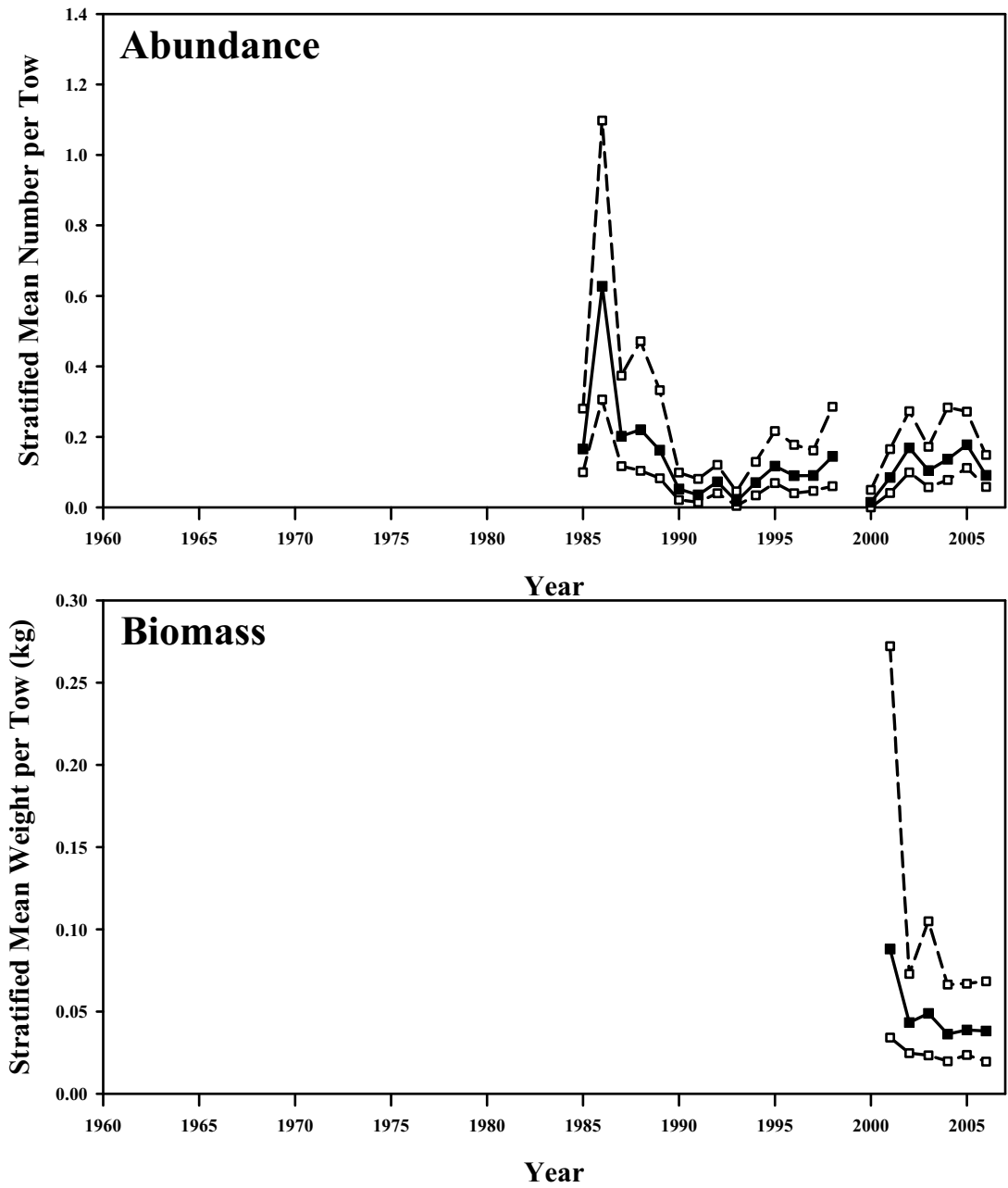


Figure B.2.79. Bootstrapped abundance and biomass of thorny skate from the NESFC scallop survey. Mean index in solid squares, 95% confidence interval in open squares.

# Thorny Skate - Massachusetts Trawl Survey

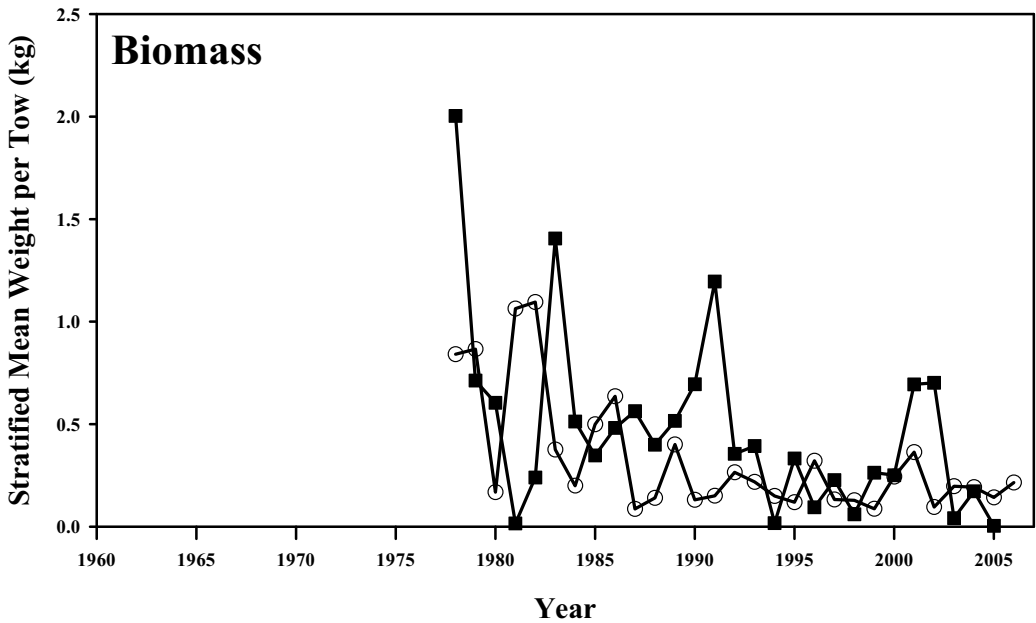
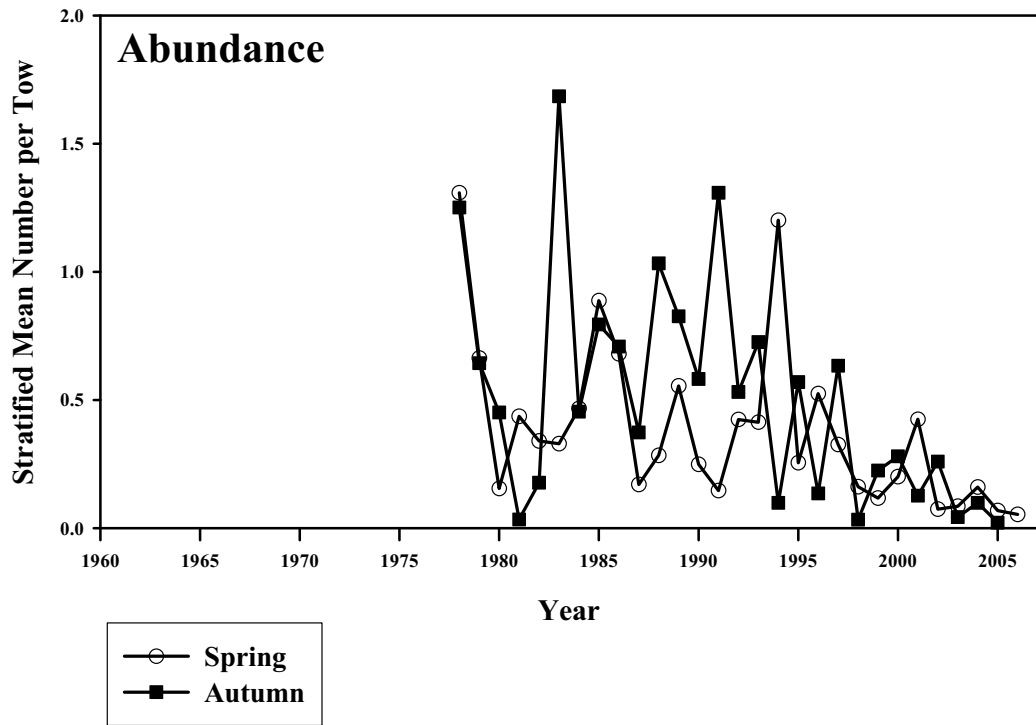
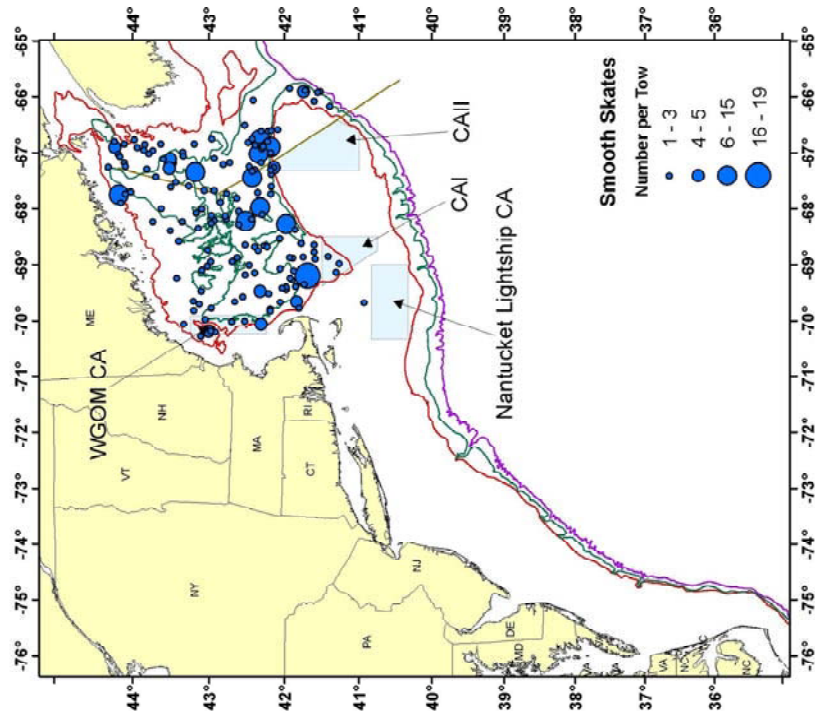
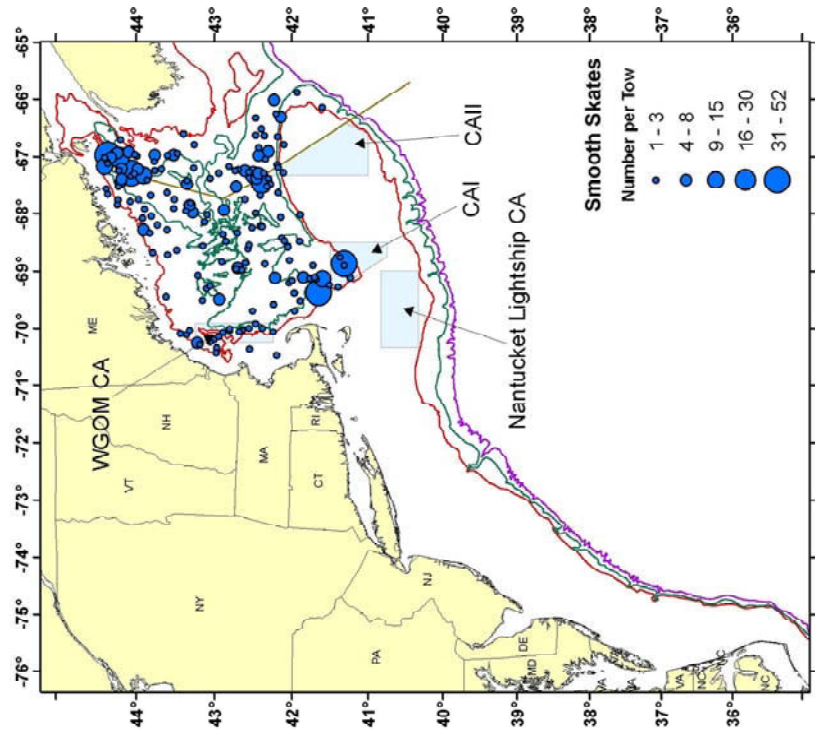


Figure B2.80. Abundance and biomass of thorny skate from the Massachusetts spring and autumn finfish bottom trawl survey in state waters (strata 25-36).



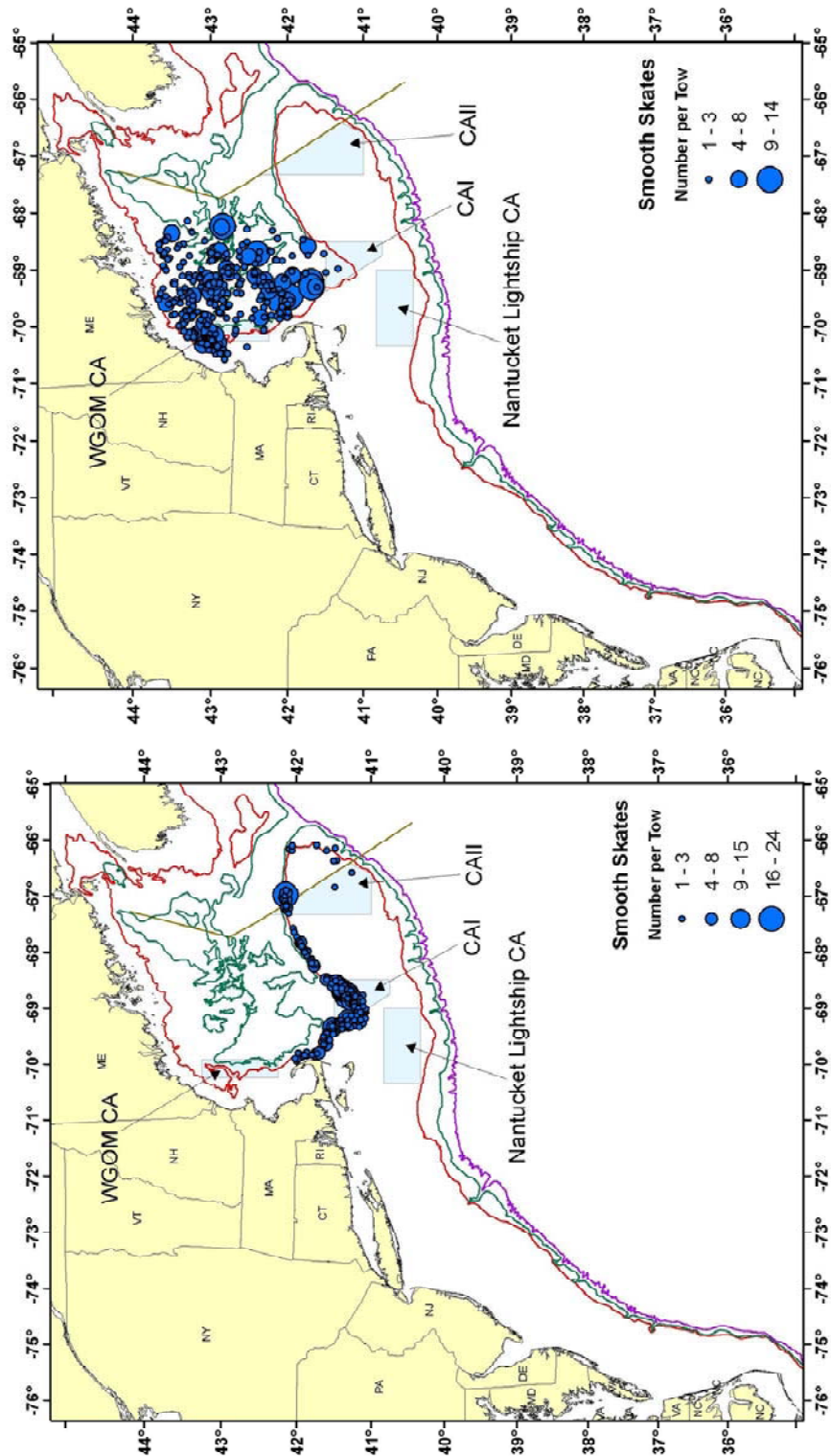


Smooth Skates from 2000-2005 NEFSC Fall Surveys



Smooth Skates from 2000-2006 NEFSC Spring Surveys

Figure B2.81. Distribution of smooth skate from the spring and autumn NEFSC surveys from 2000-2006.



Smooth Skates from 1985-2006 NEFSC Shrimp Surveys

Smooth Skates from 1985-2006 NEFSC Scallop Surveys

Figure B2.82. Distribution of smooth skate from the NEFSC scallop and shrimp surveys from 1985-2006.

## Smooth Skate GOM-SNE Offshore Only

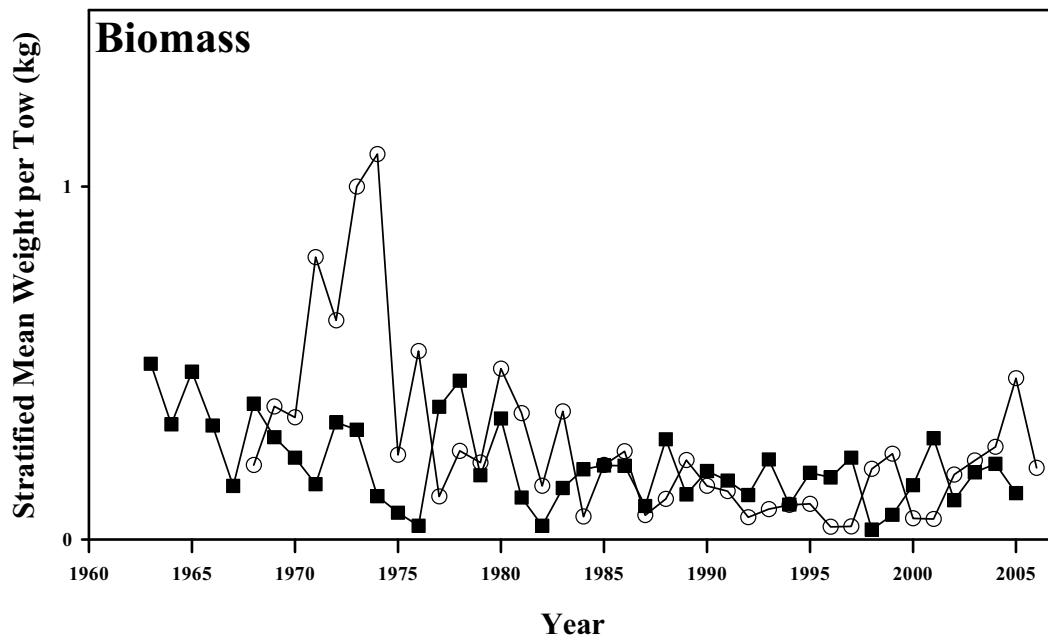
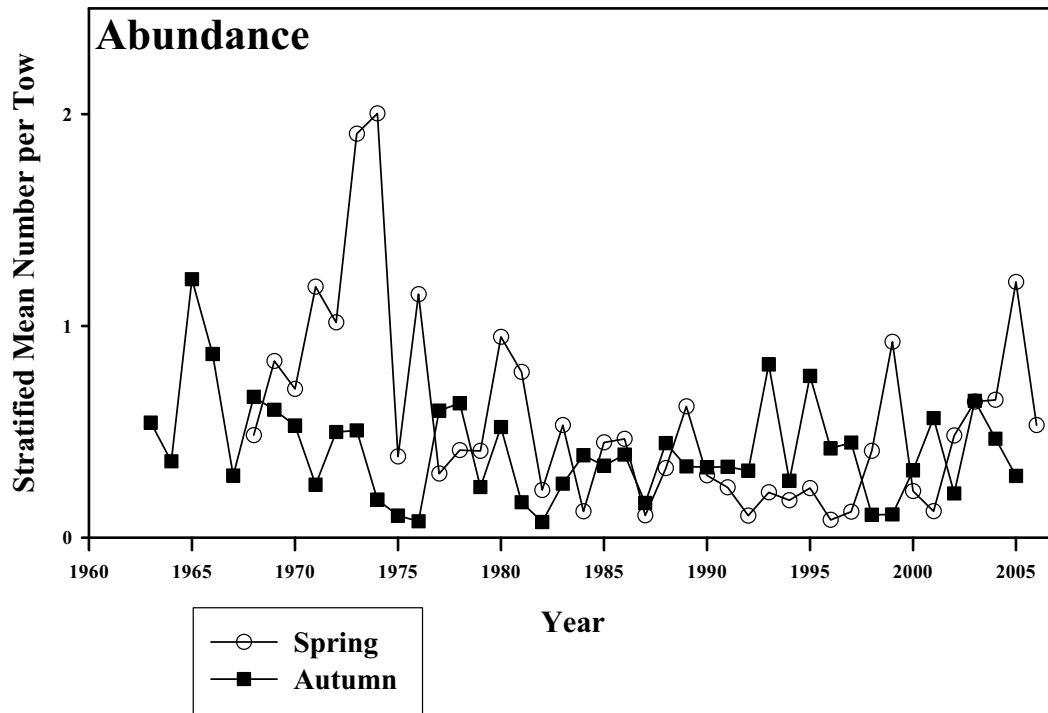


Figure B2.83. Abundance and biomass of smooth skate from the NESFC spring (circles) and autumn (squares) bottom trawl surveys from 1963-2006 in the Gulf of Maine to Southern New England offshore region.

## Smooth Skate GOM-SNE Offshore Only - Spring Survey

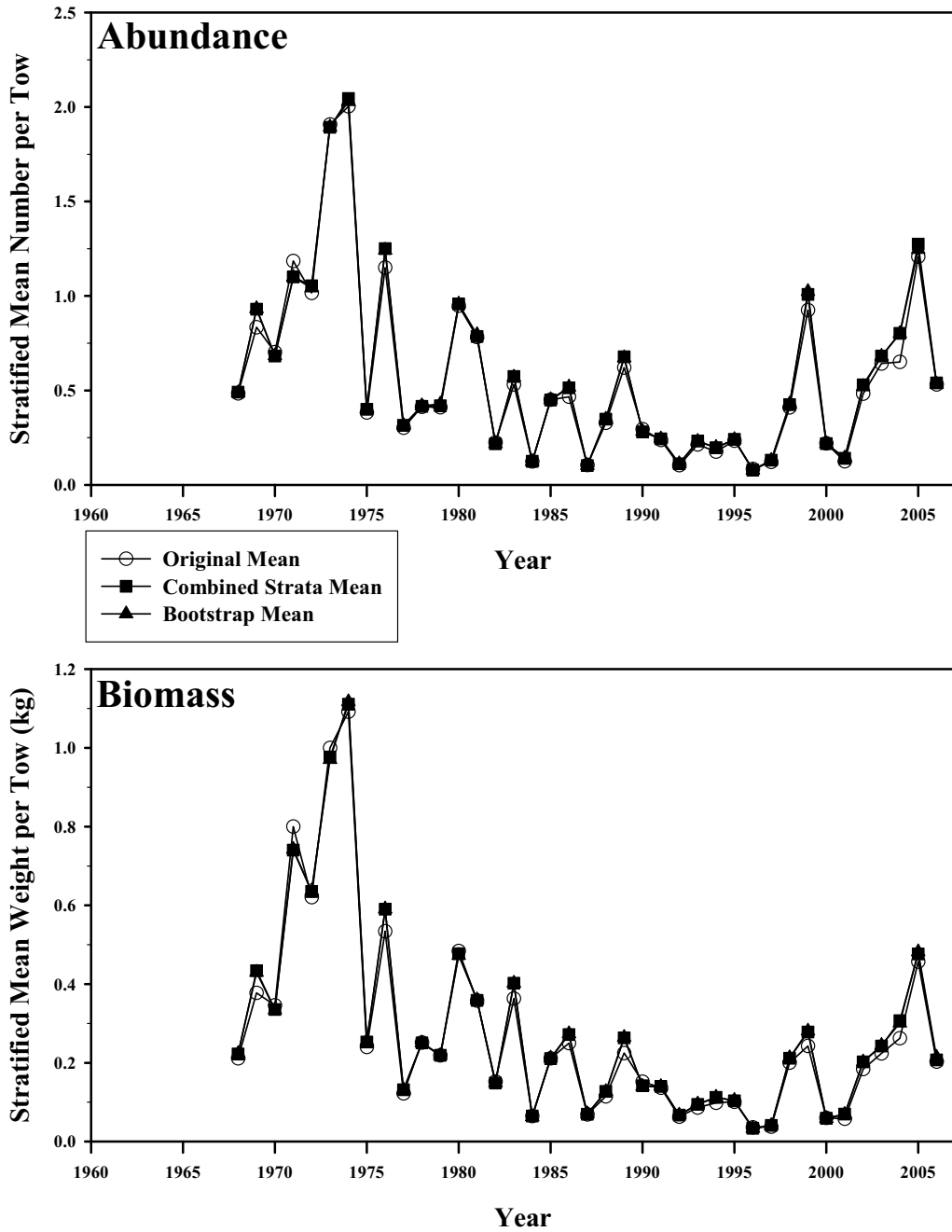


Figure B2.84. Abundance and biomass of smooth skate from the NESFC spring bottom trawl surveys from 1968-2006 in the Gulf of Maine to Southern New England offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Smooth Skate - Spring Survey GOM-SNE Offshore Only

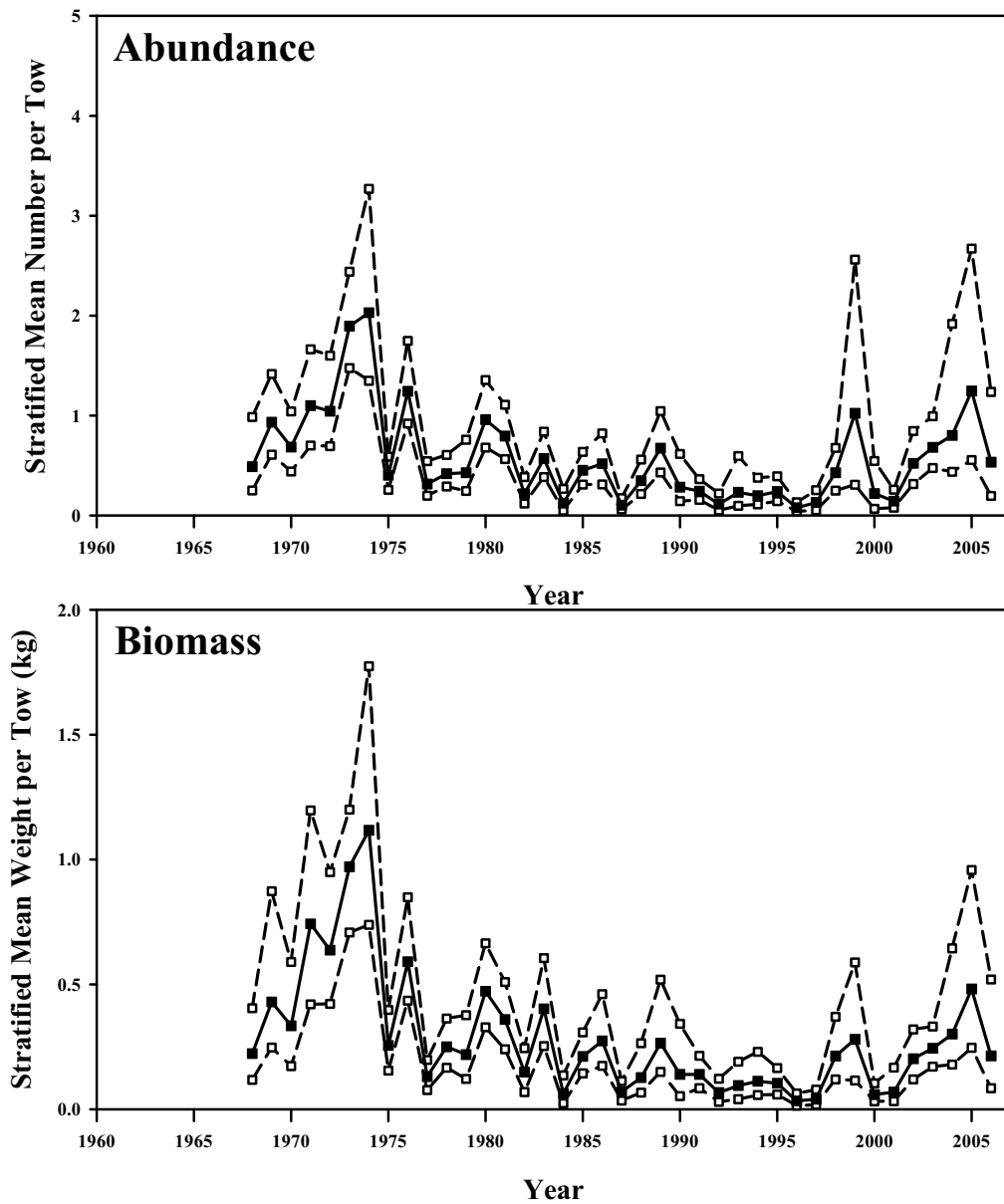


Figure B2.85. Bootstrapped abundance and biomass of smooth skate from the NESFC spring bottom trawl survey in the Gulf of Maine to Southern New England offshore region. Mean index in solid squares, 95% confidence interval in open squares.

## Smooth Skate GOM-SNE Offshore Only - Autumn Survey

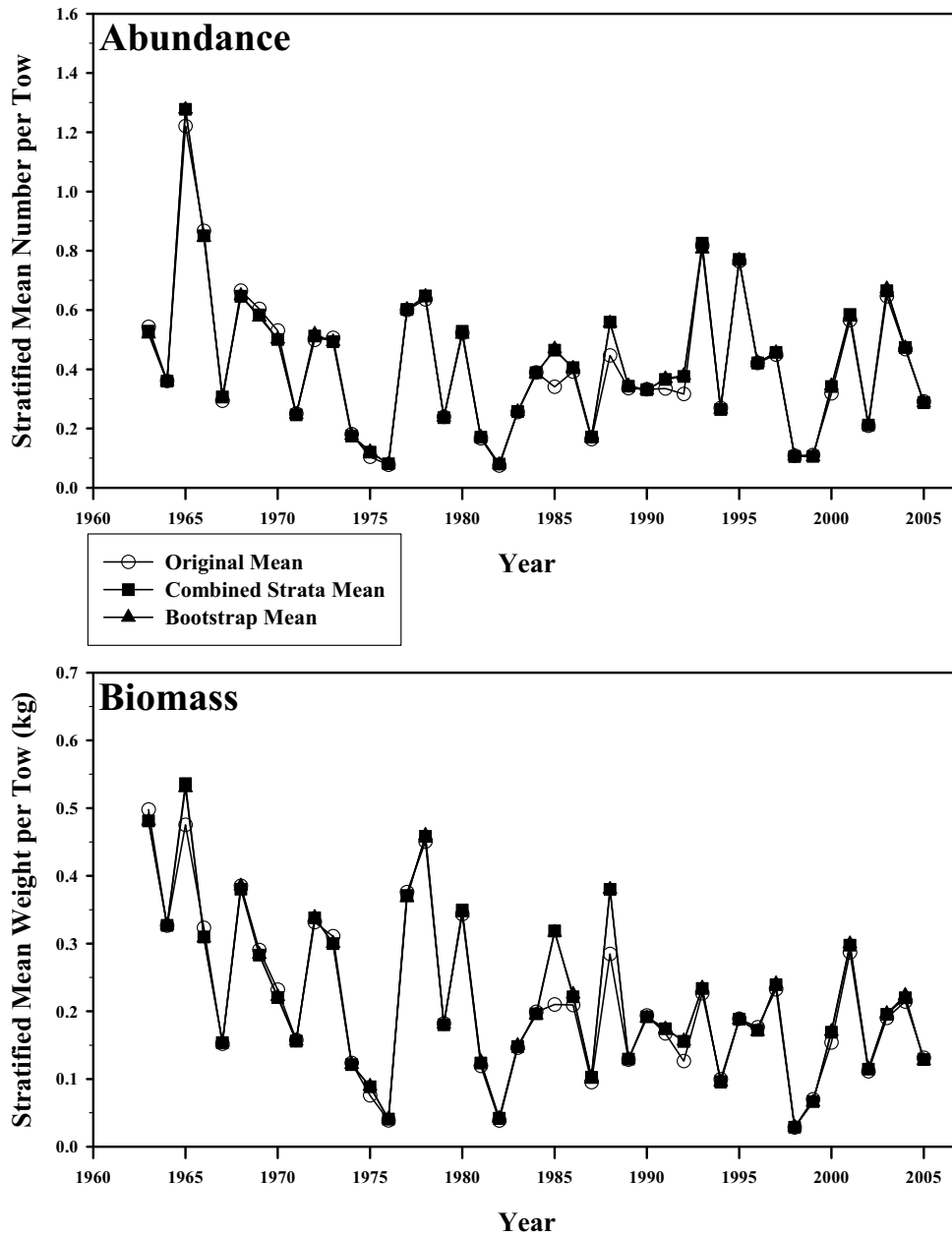


Figure B2.86. Abundance and biomass of smooth skate from the NESFC autumn bottom trawl surveys from 1968-2006 in the Gulf of Maine to Southern New England offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Smooth Skate - Autumn Survey GOM-SNE Offshore Only

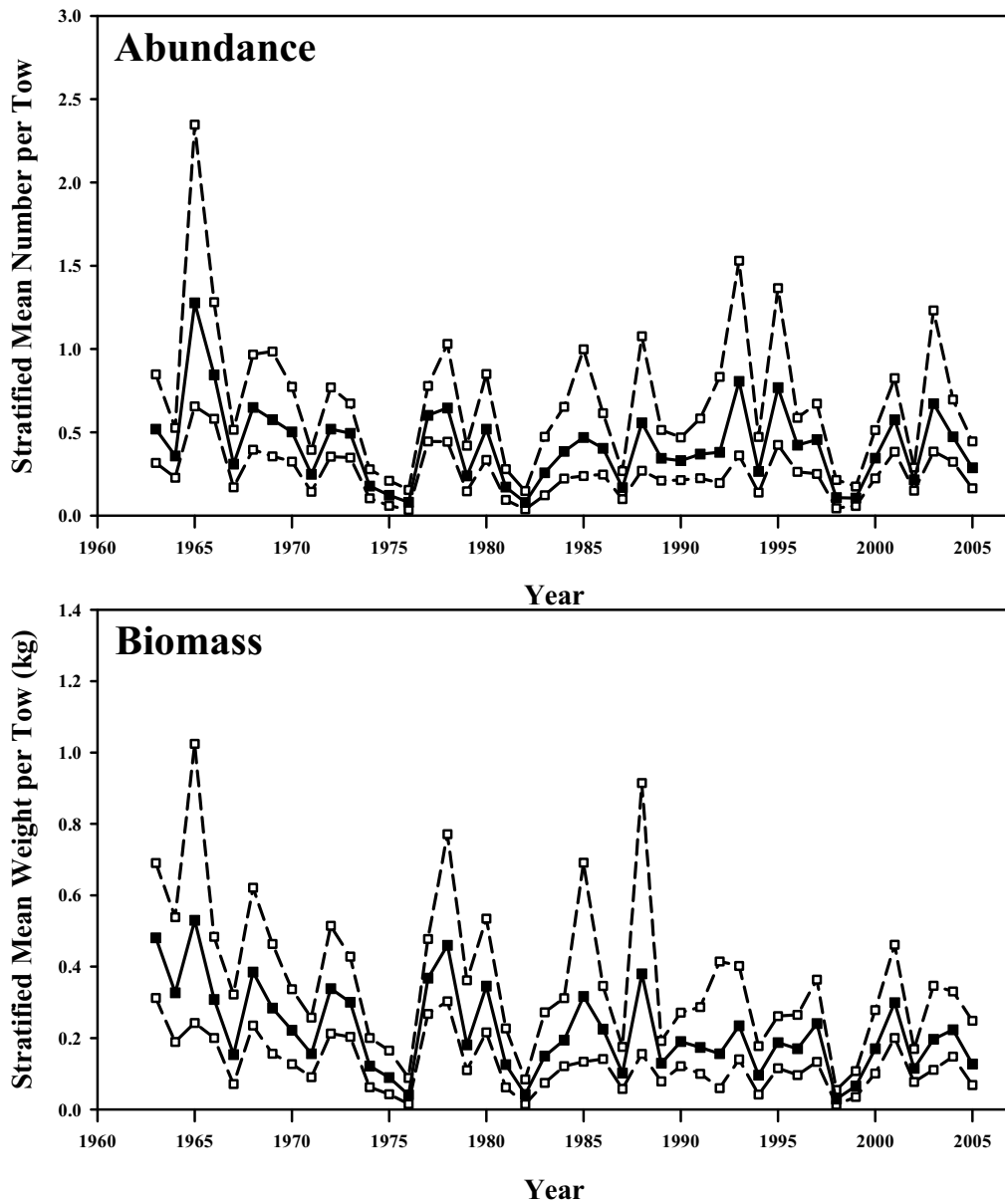
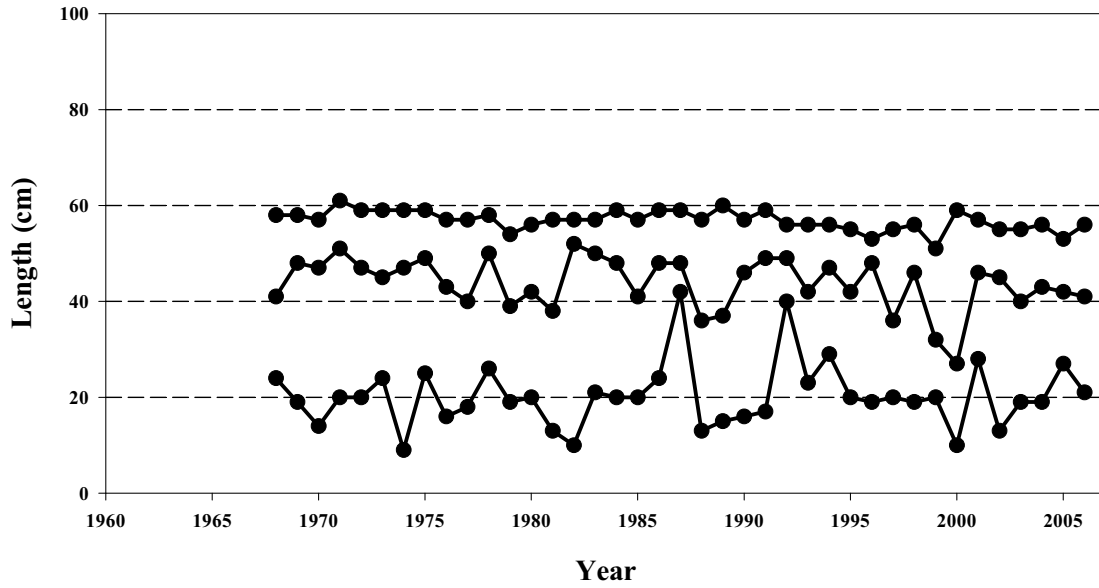


Figure B2.87. Bootstrapped abundance and biomass of smooth skate from the NESFC autumn bottom trawl survey in the Gulf of Maine to Southern New England offshore region. Mean index in solid squares, 95% confidence interval in open squares.

# Smooth Skate: GOM-SNE Offshore Percentiles of Length Composition

## Spring Survey



## Autumn Survey

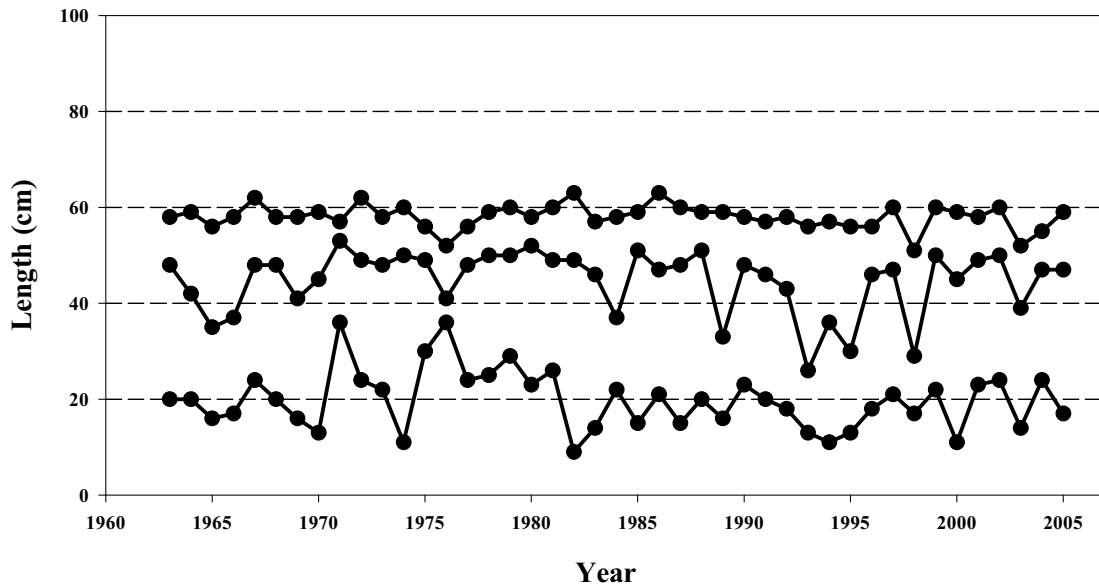


Figure B2.88. Percentiles of length composition (5, 50, and 95) of smooth skate from the NESFC spring and autumn bottom trawl surveys from 1963-2006 in the Gulf of Maine to Southern New England offshore region.



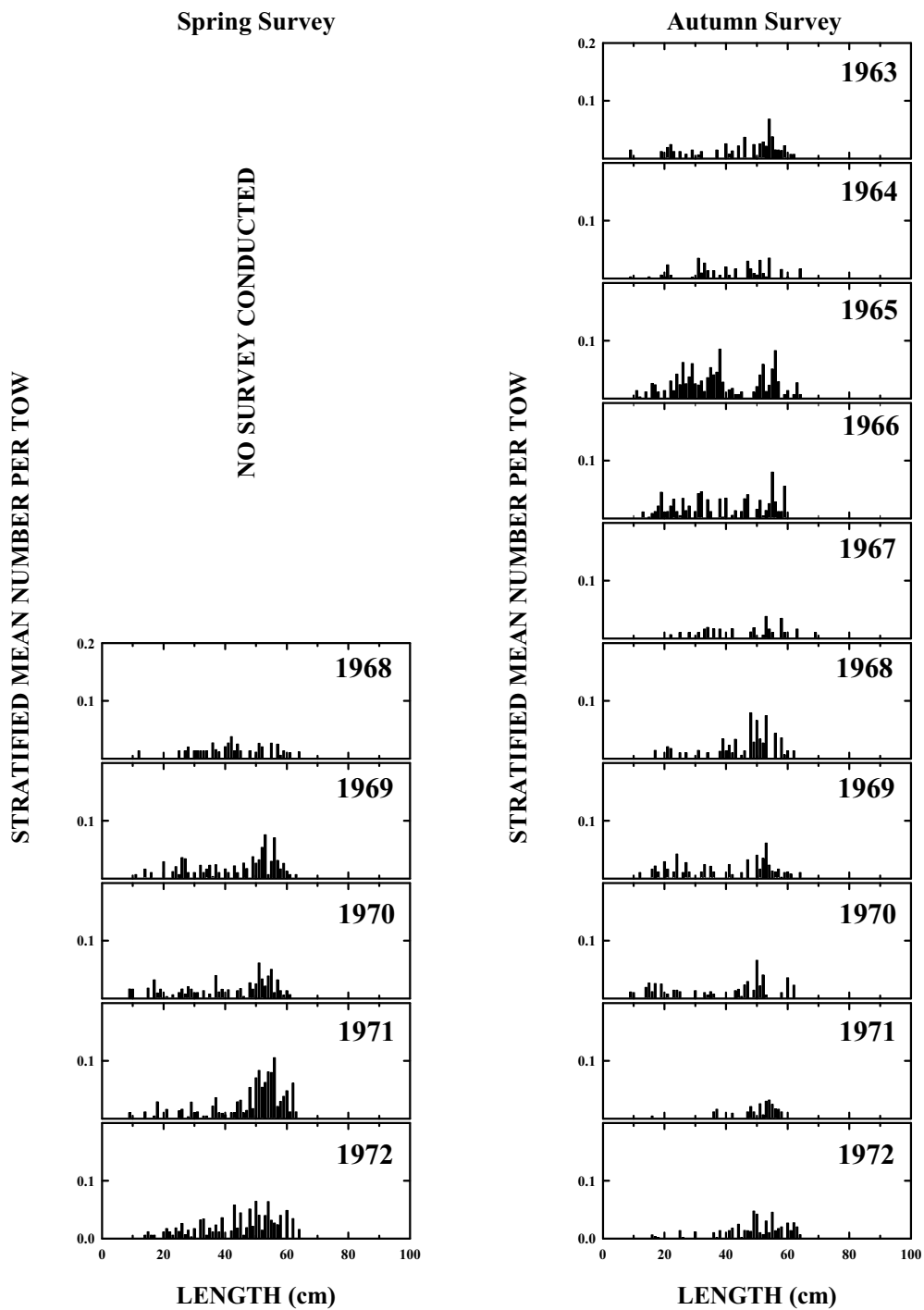


Figure B2.89. Smooth skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1963-1972.

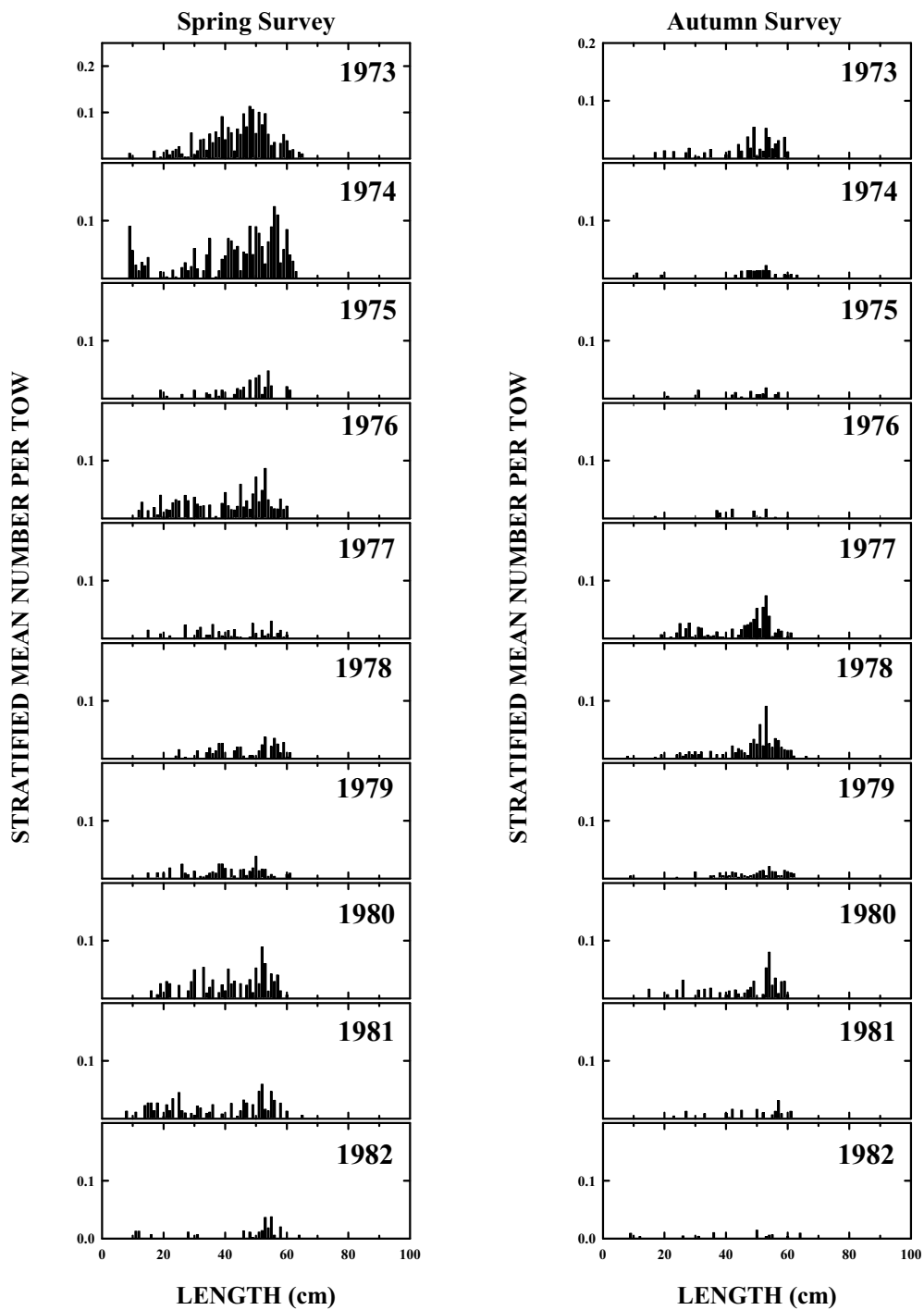


Figure B2.90. Smooth skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1973-1982.

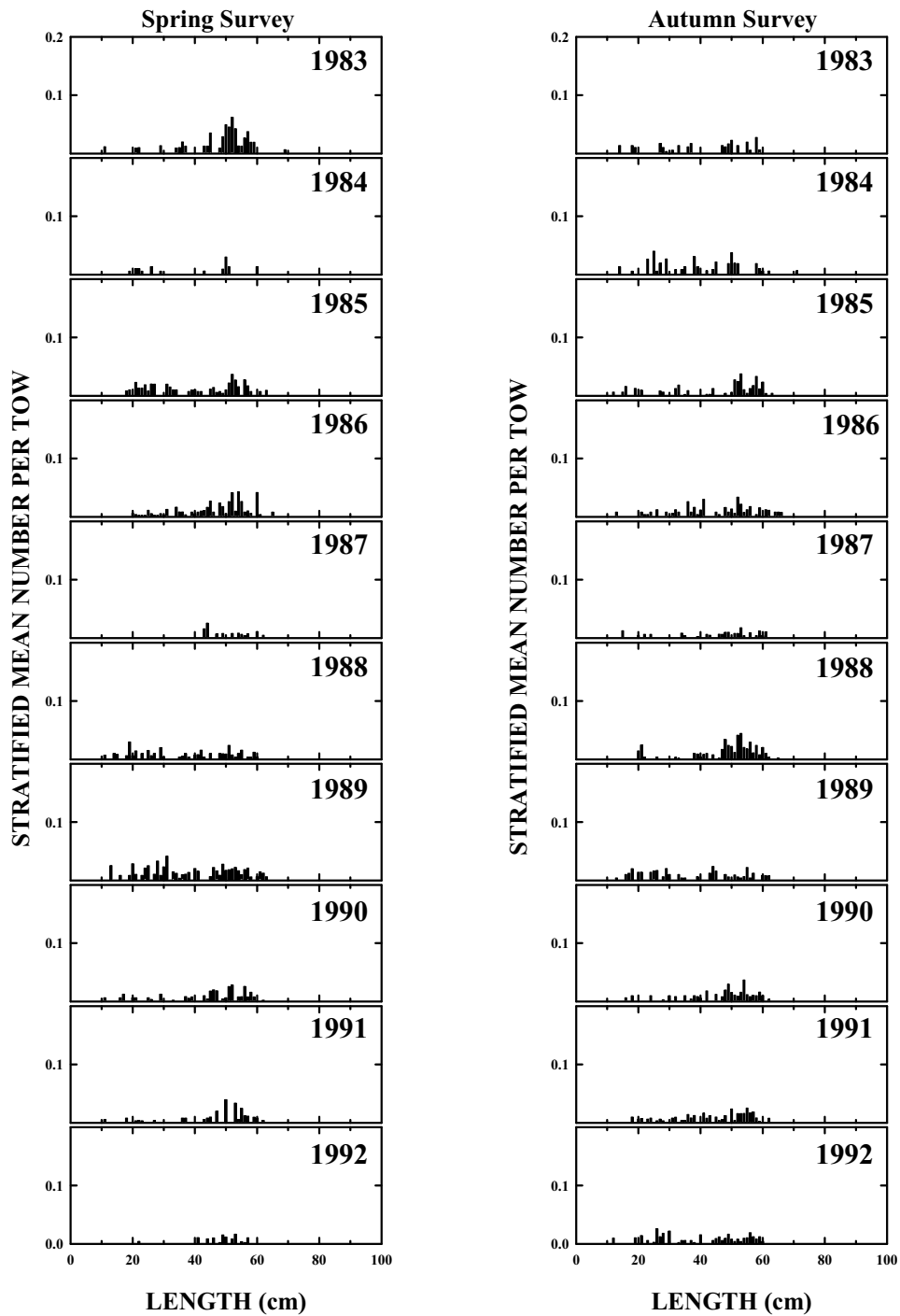


Figure B2.91. Smooth skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1983-1992.

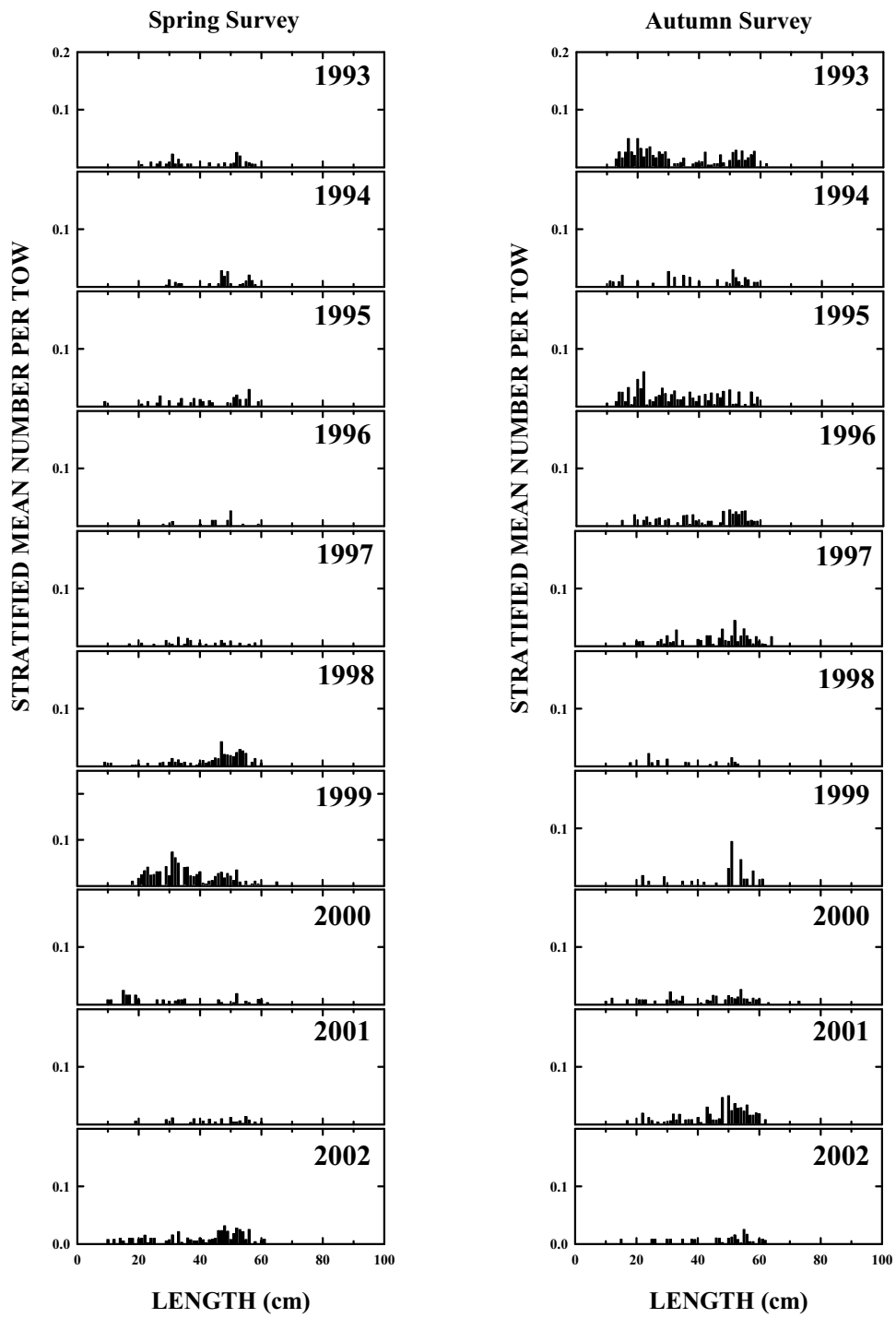


Figure B2.92. Smooth skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 1993-2002.

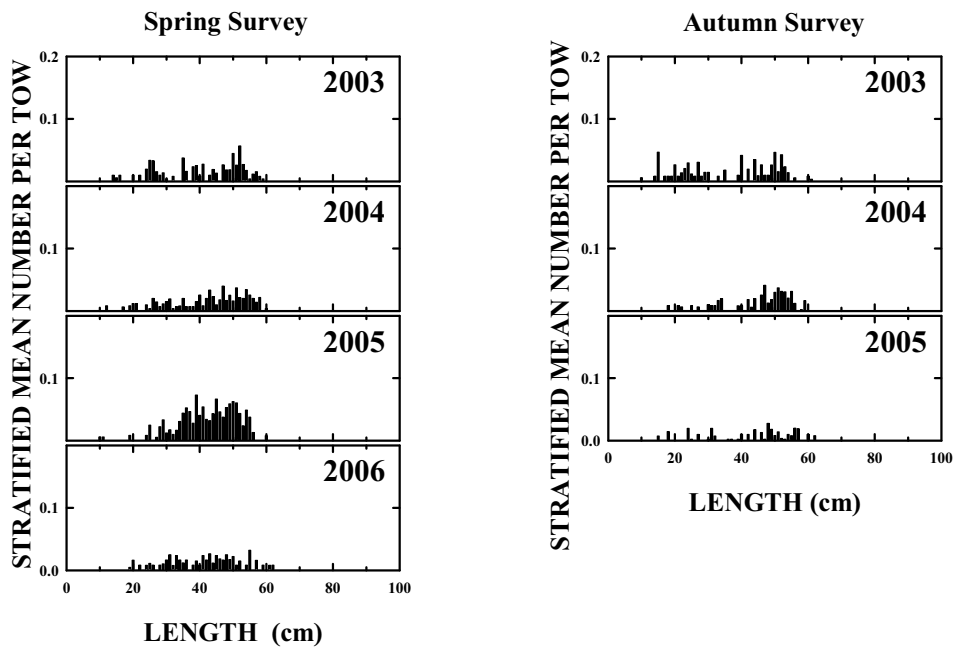


Figure B2.93. Smooth skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Gulf of Maine to Southern New England offshore region, 2003-2006.

## Smooth Skate Scallop Survey

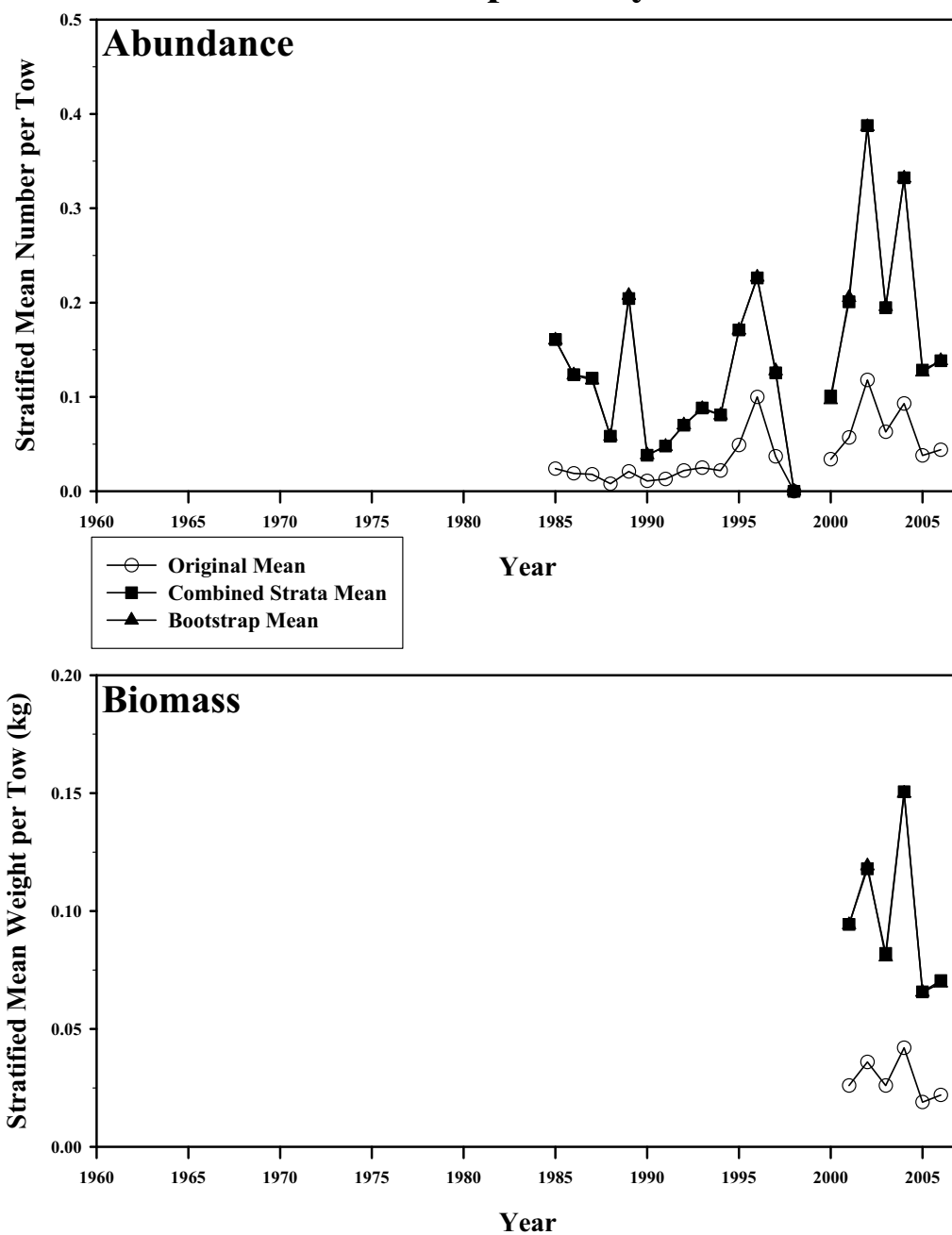


Figure B2.94. Abundance and biomass of smooth skate from the NESFC scallop surveys from 1985-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Smooth Skate Scallop Survey

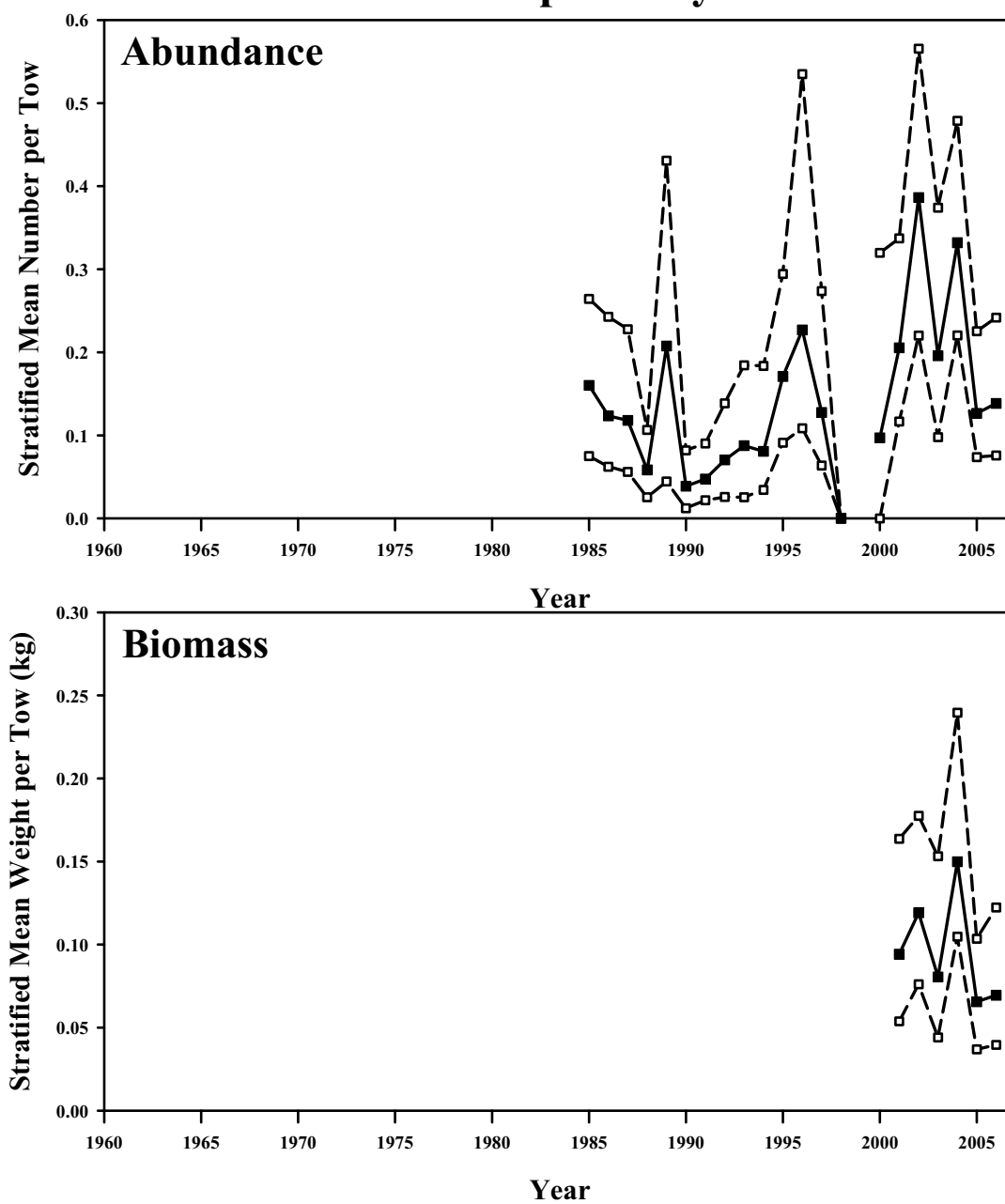


Figure B2.95. Bootstrapped abundance and biomass of smooth skate from the NESFC scallop survey. Mean index in solid squares, 95% confidence interval in open squares.

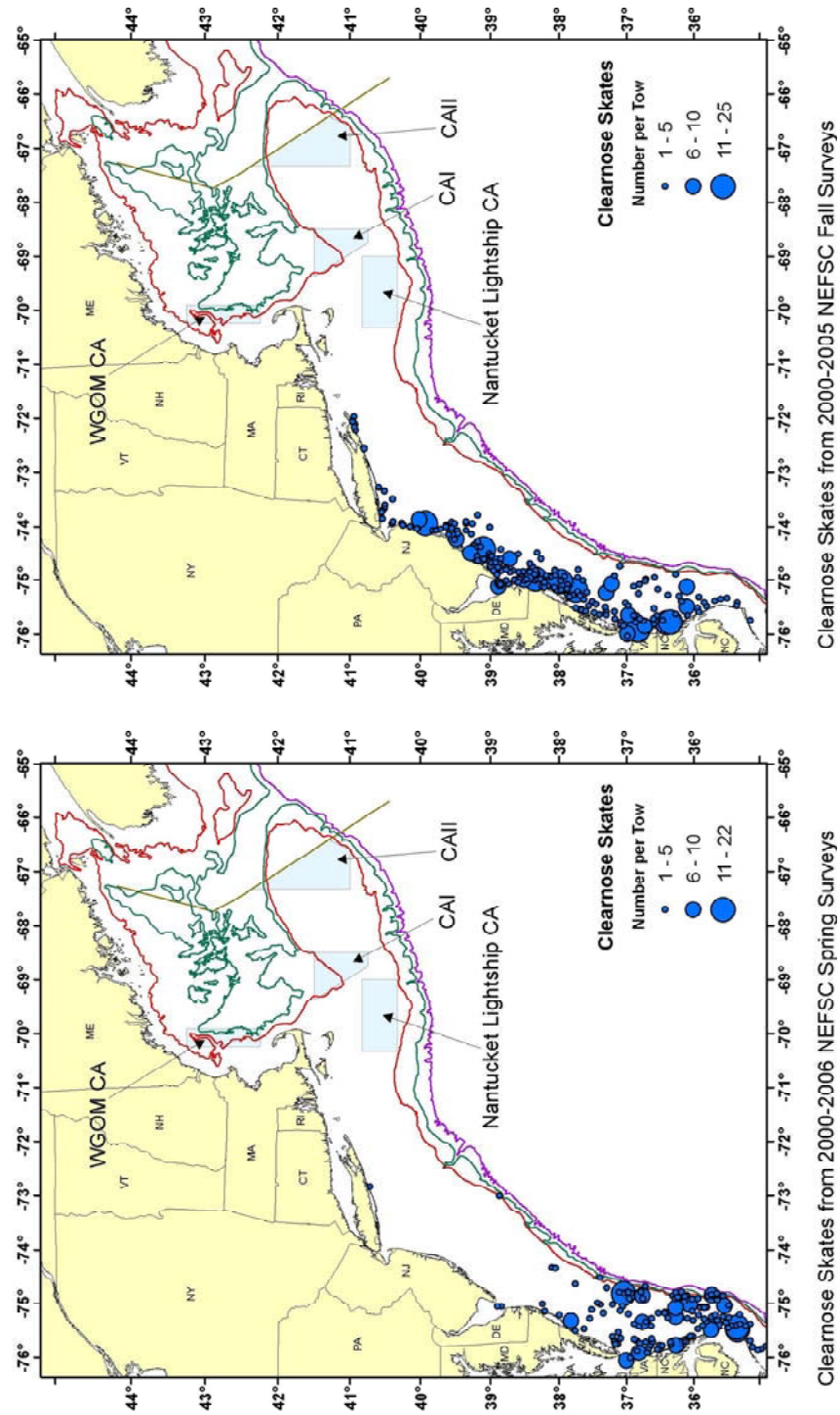
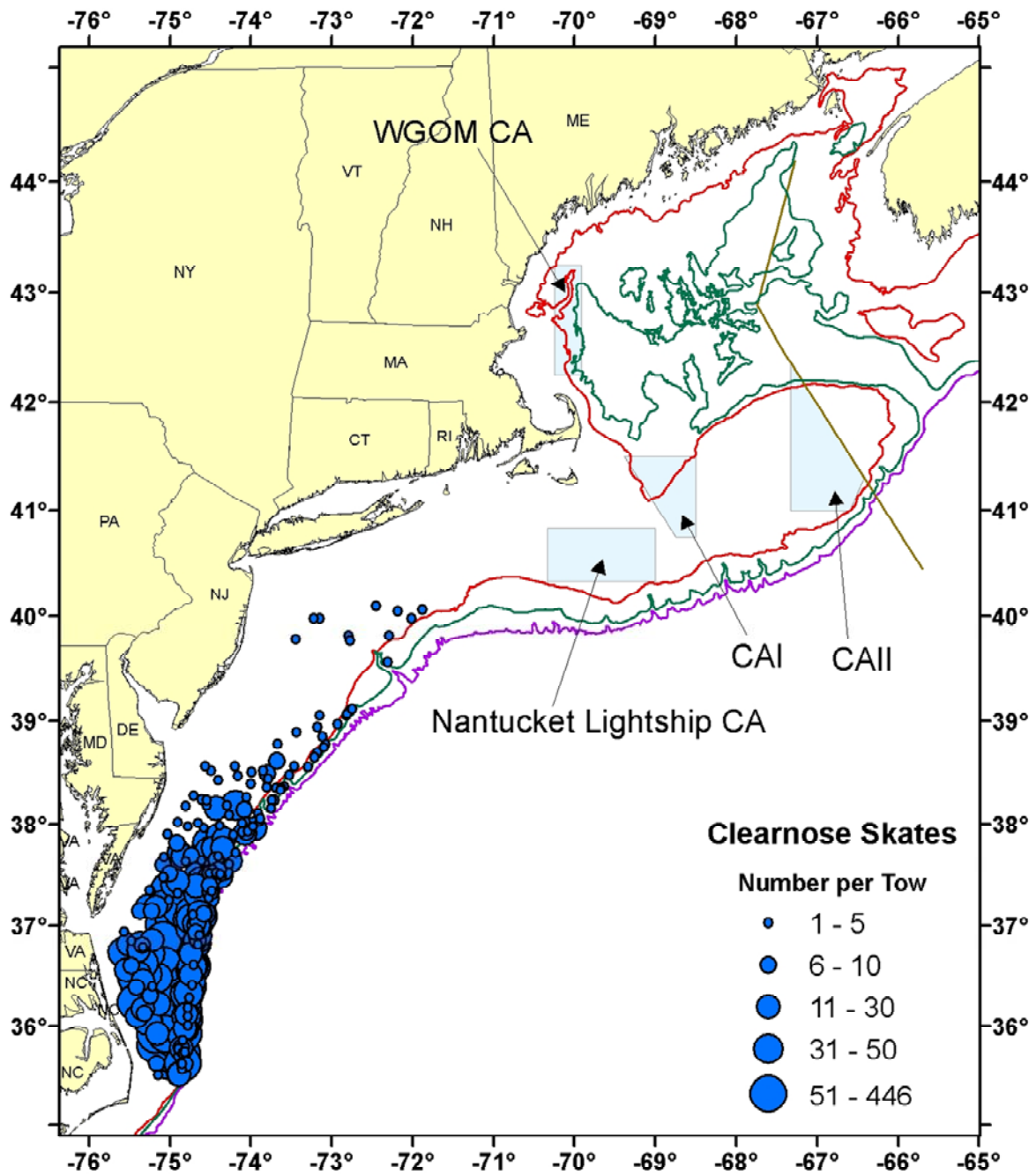


Figure B2.96. Distribution of clearnose skate from the spring and autumn NEFSC surveys from 2000-2006.





Clearnose Skates from 2000-2006 NEFSC Winter Surveys

Figure B2.97. Distribution of clearnose skate from the winter NEFSC surveys from 2000-2006.

## Clearnose Skate Mid-Atlantic All strata

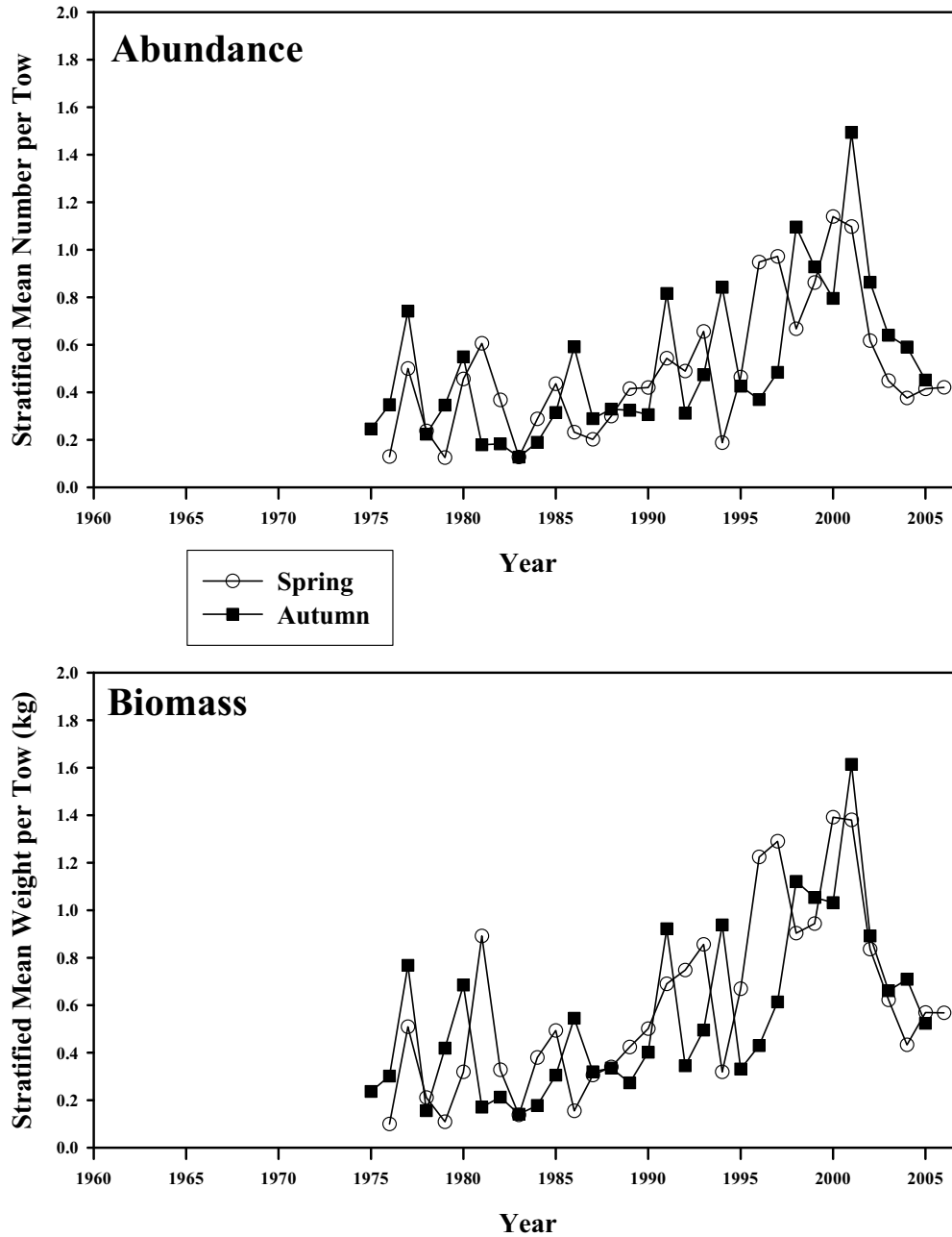


Figure B2.98. Abundance and biomass of clearnose skate from the NESFC spring (circles) and autumn (squares) bottom trawl surveys from 1975-2006 in the Mid-Atlantic (all strata).

## Clearnose Skate Mid-Atlantic All Strata - Spring Survey

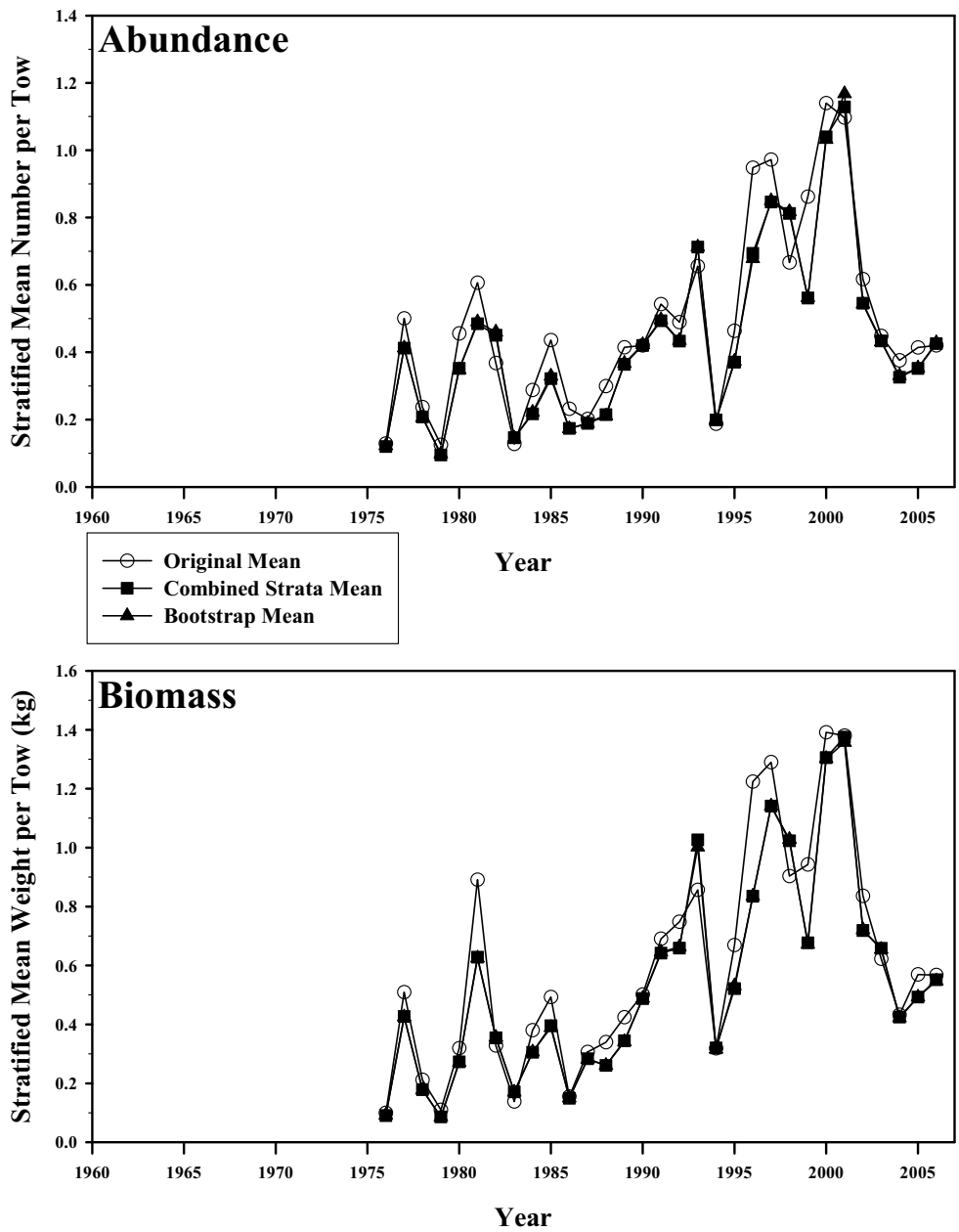


Figure B2.99. Abundance and biomass of clearnose skate from the NESFC spring bottom trawl surveys from 1976-2006 in the Mid-Atlantic (all strata). The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Clearnose Skate - Spring Survey Mid-Atlantic All Strata

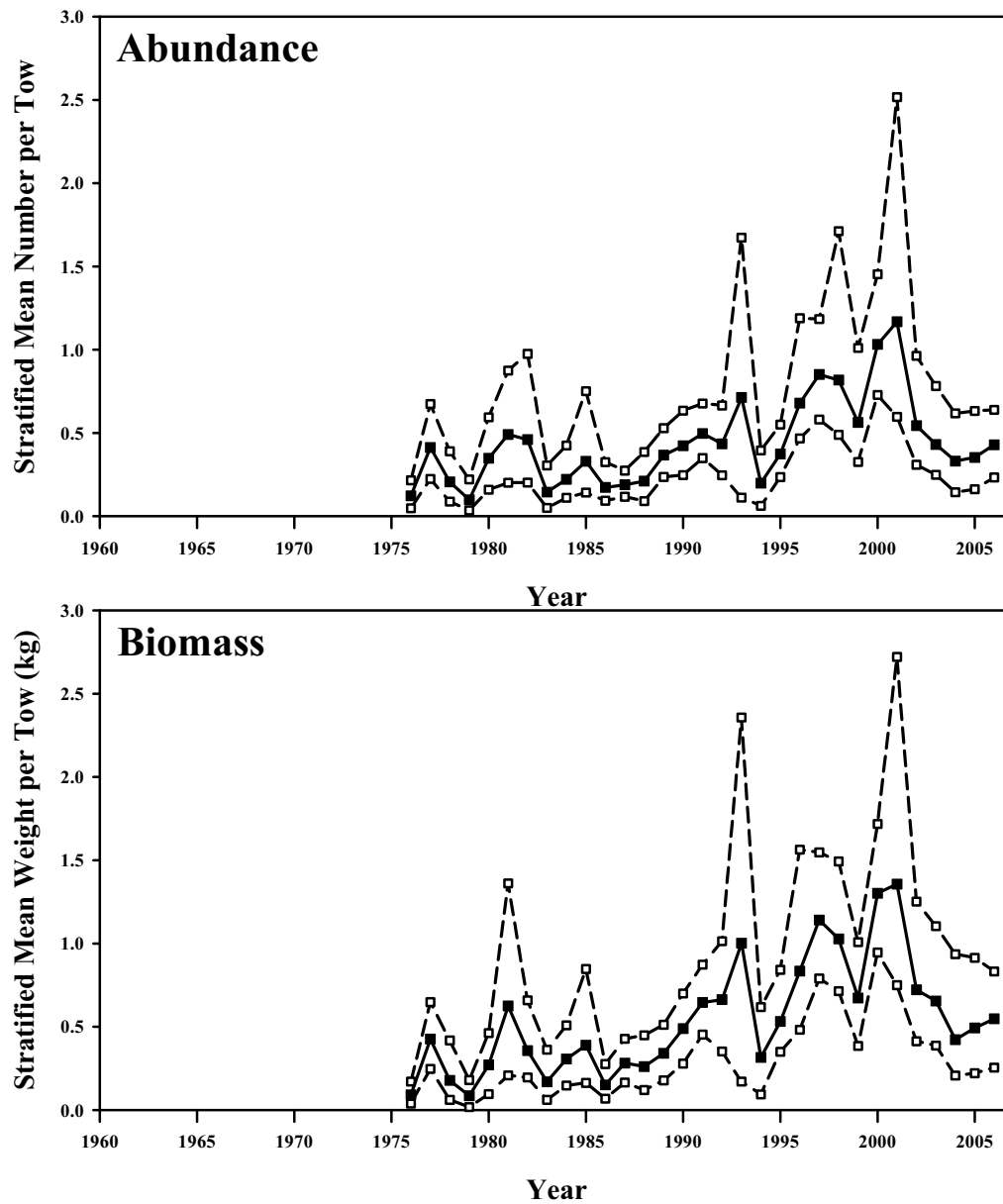


Figure B2.100. Bootstrapped abundance and biomass of clearnose skate from the NESFC spring bottom trawl survey in the Mid-Atlantic region (all strata). Mean index in solid squares, 95% confidence interval in open squares.

## Clearnose Skate Mid-Atlantic All Strata - Autumn Survey

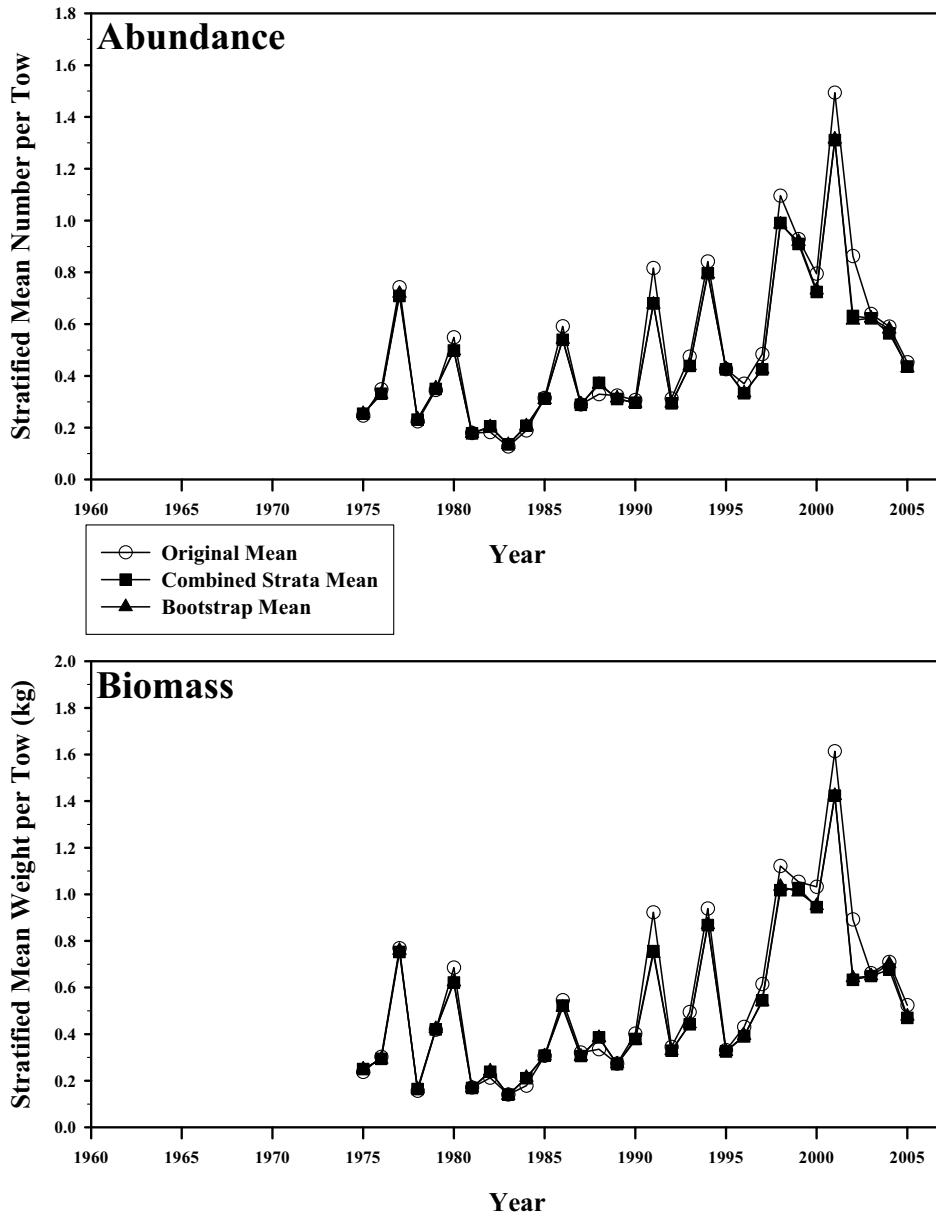


Figure B2.101. Abundance and biomass of clearnose skate from the NESFC autumn bottom trawl surveys from 1976-2006 in the Mid-Atlantic (all strata). The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Clearnose Skate - Autumn Survey Mid-Atlantic All Strata

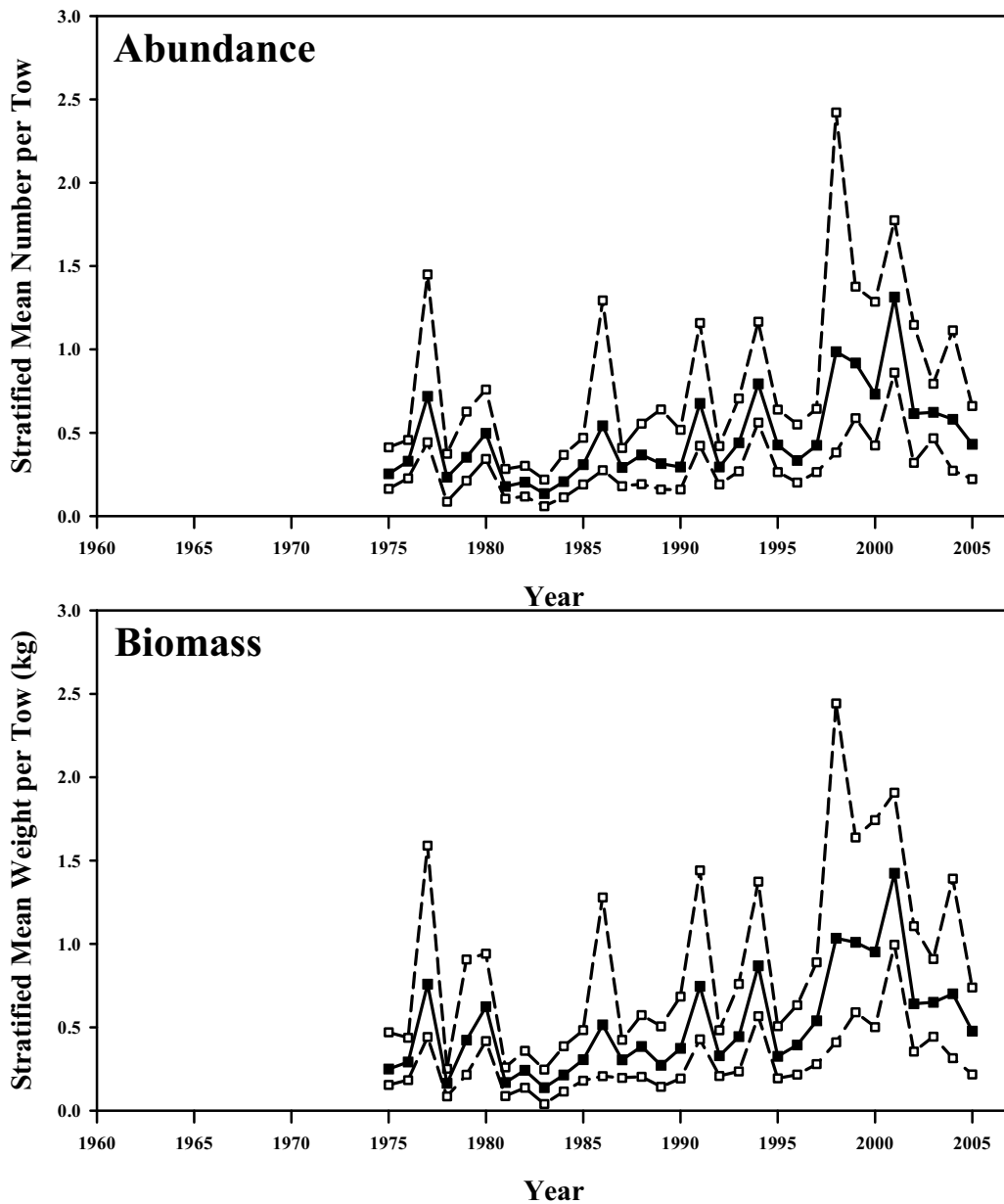


Figure B2.102. Bootstrapped abundance and biomass of clearnose skate from the NESFC autumn bottom trawl survey in the Mid-Atlantic region (all strata). Mean index in solid squares, 95% confidence interval in open squares.

# Clearnose Skate Percentiles of Length Composition

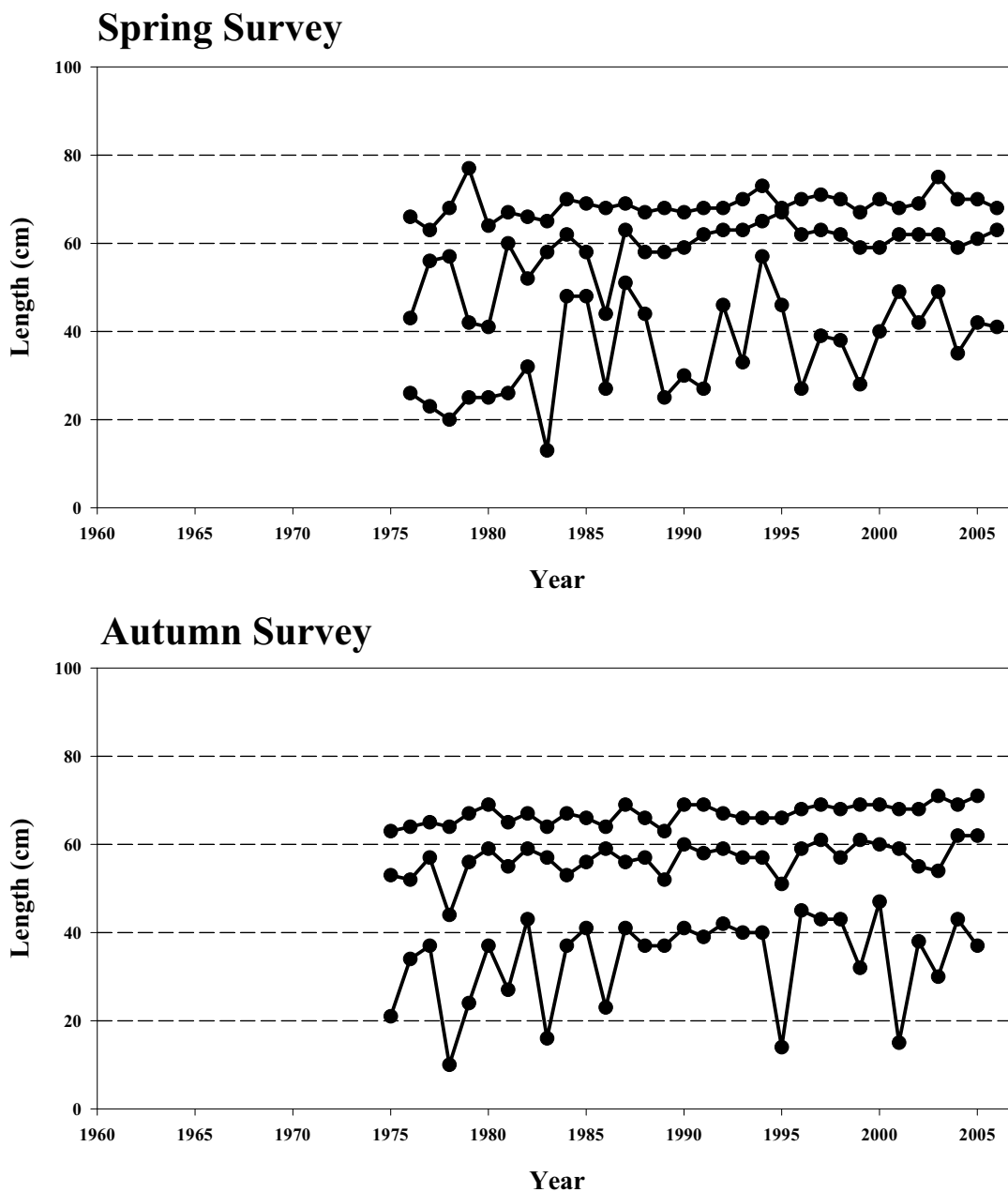


Figure B2.103. Percentiles of length composition (5, 50, and 95) of clearnose skate from the NESFC spring and autumn bottom trawl surveys from 1975-2006 in the Mid-Atlantic region (all strata).

Spring Survey

Autumn Survey

Consistent strata set not available prior to 1975/76

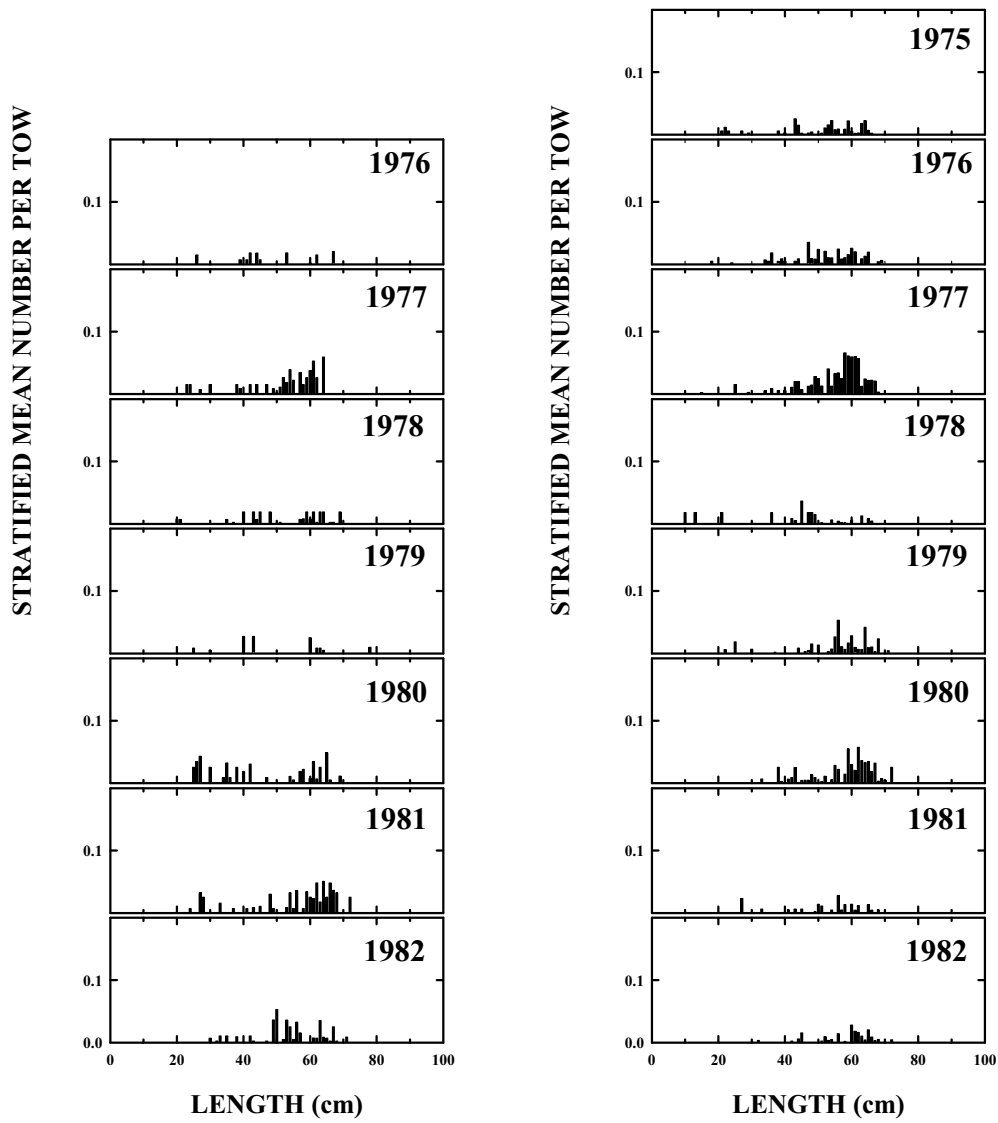


Figure B2.104. Clearnose skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Mid-Atlantic (all strata), 1975-1982.



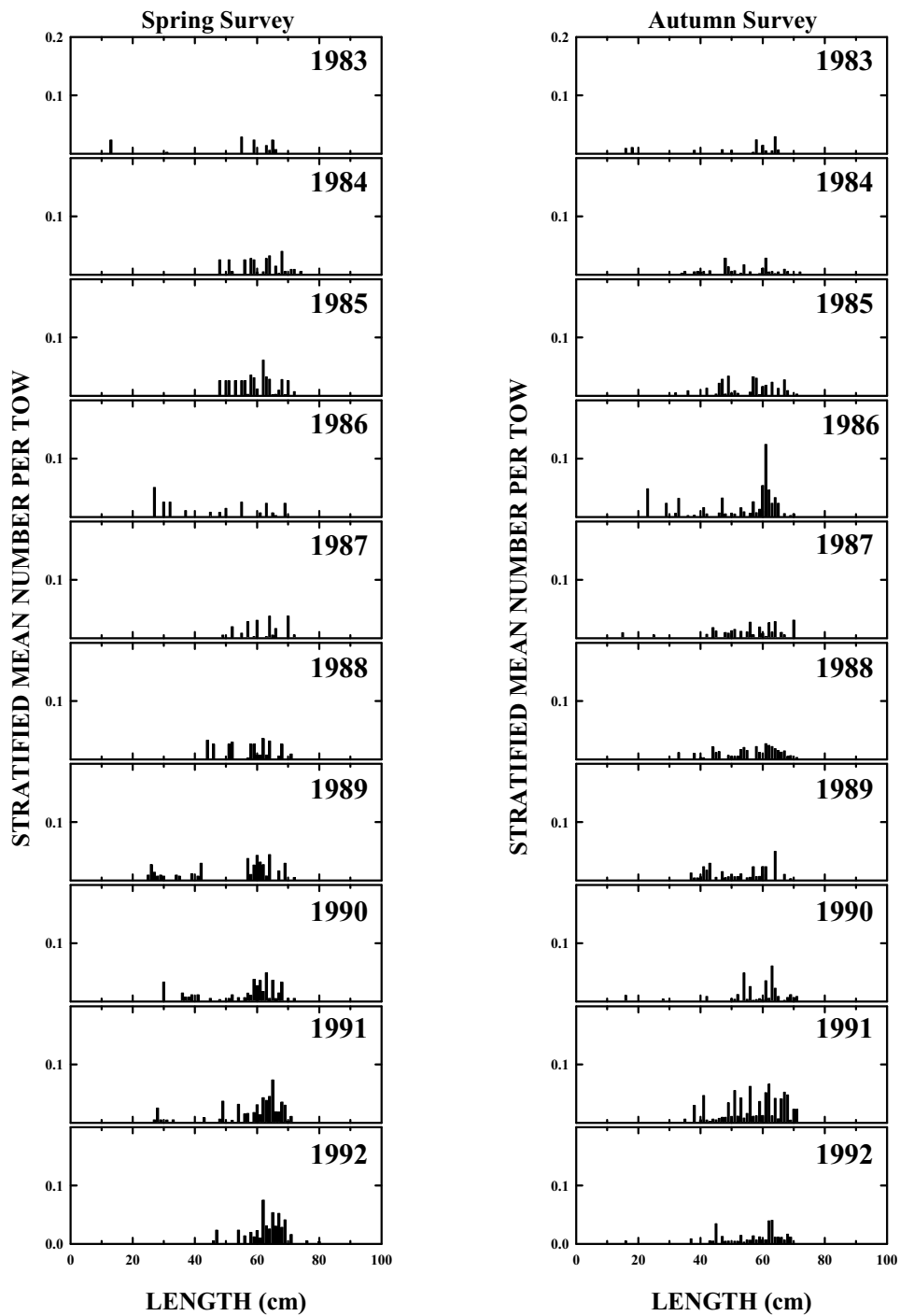


Figure B2.105. Clearnose skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Mid-Atlantic (all strata), 1983-1992.

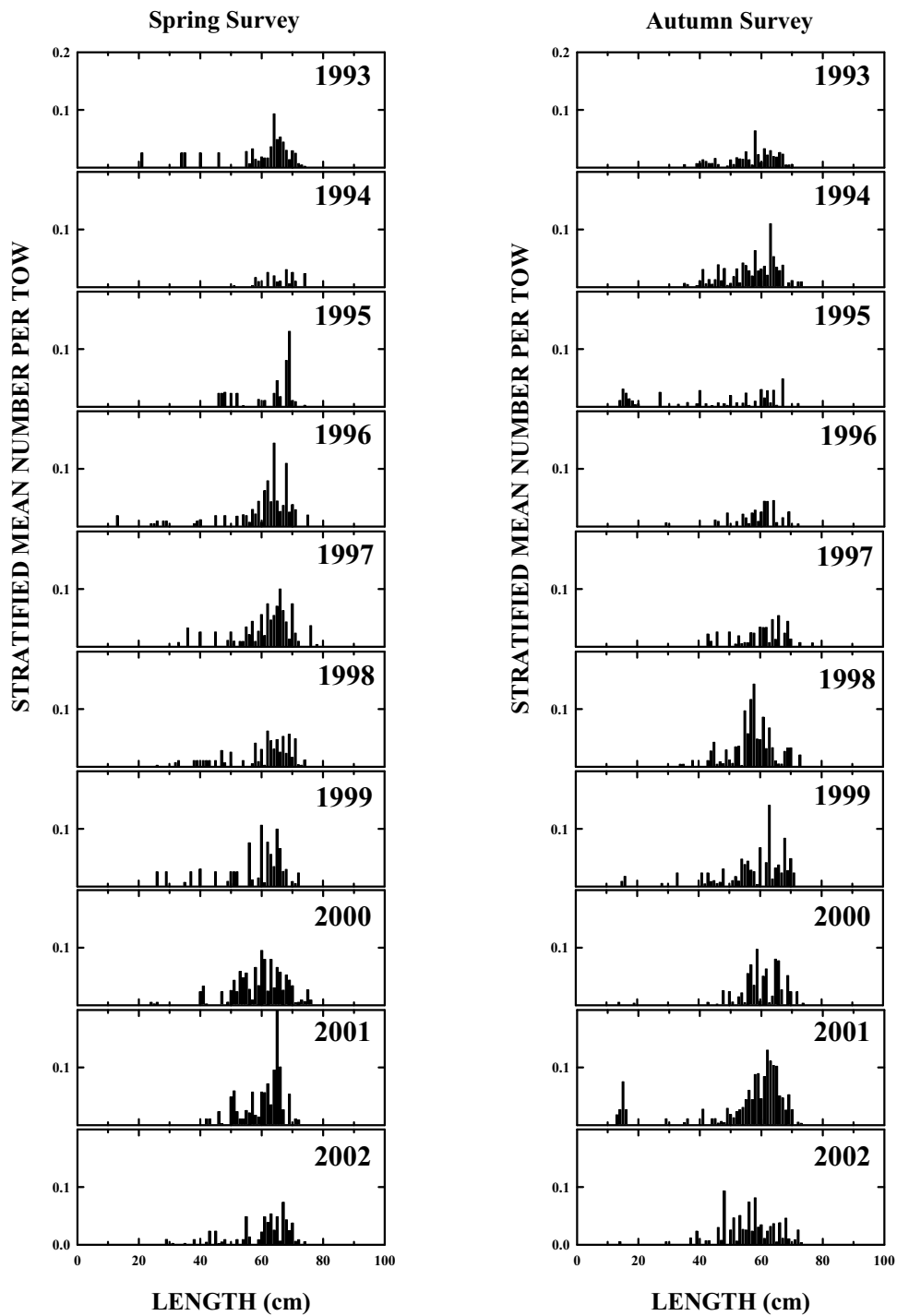


Figure B2.106. Clearnose skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Mid-Atlantic (all strata), 1993-2002.

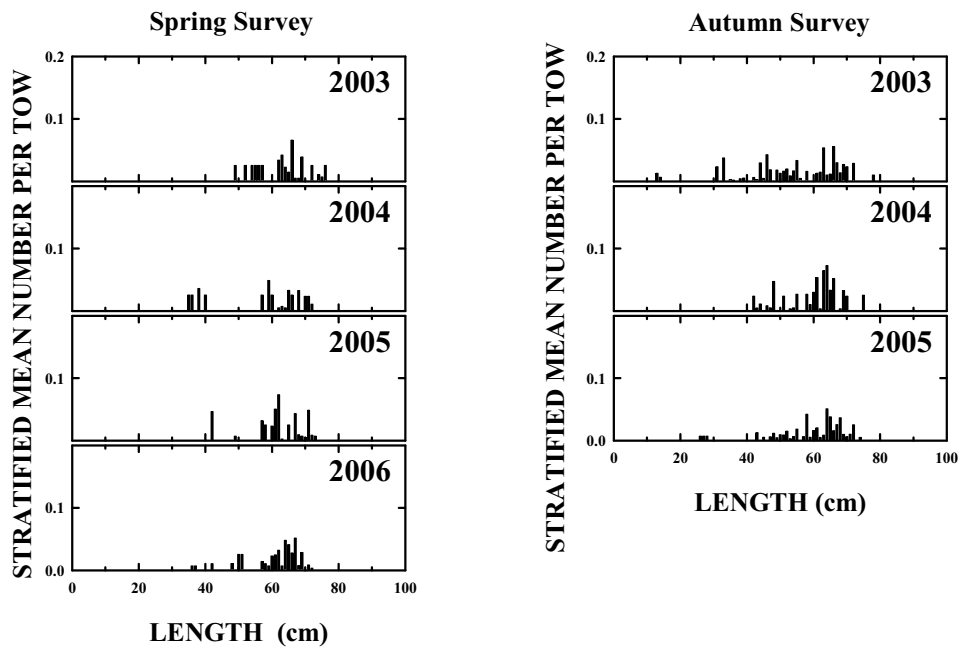


Figure B2.107. Clearnose skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Mid-Atlantic (all strata), 2003-2006.

## Clearnose Skate Winter Survey

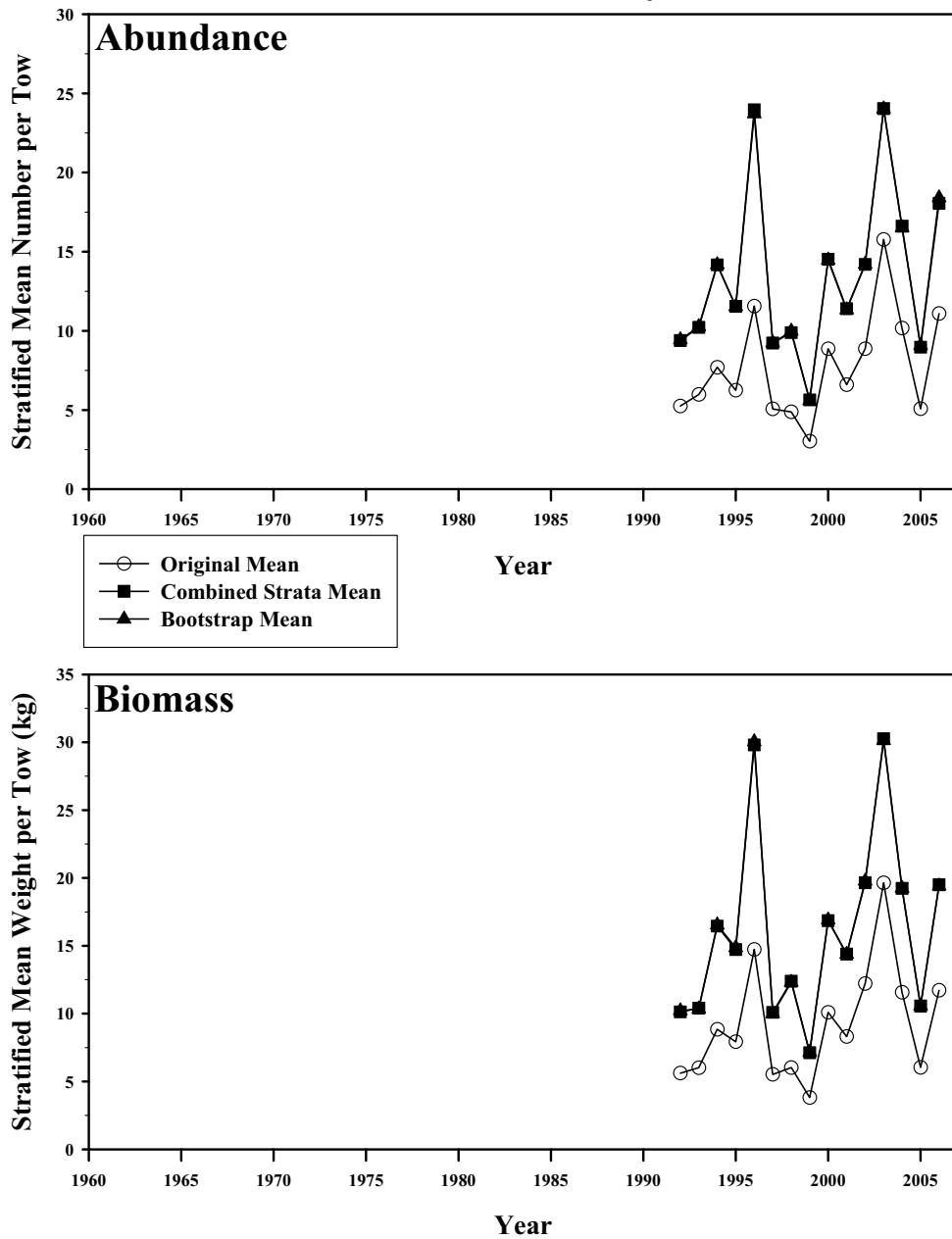


Figure B2.108. Abundance and biomass of clearnose skate from the NESFC winter bottom trawl surveys from 1992-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Clearnose Skate Winter Survey

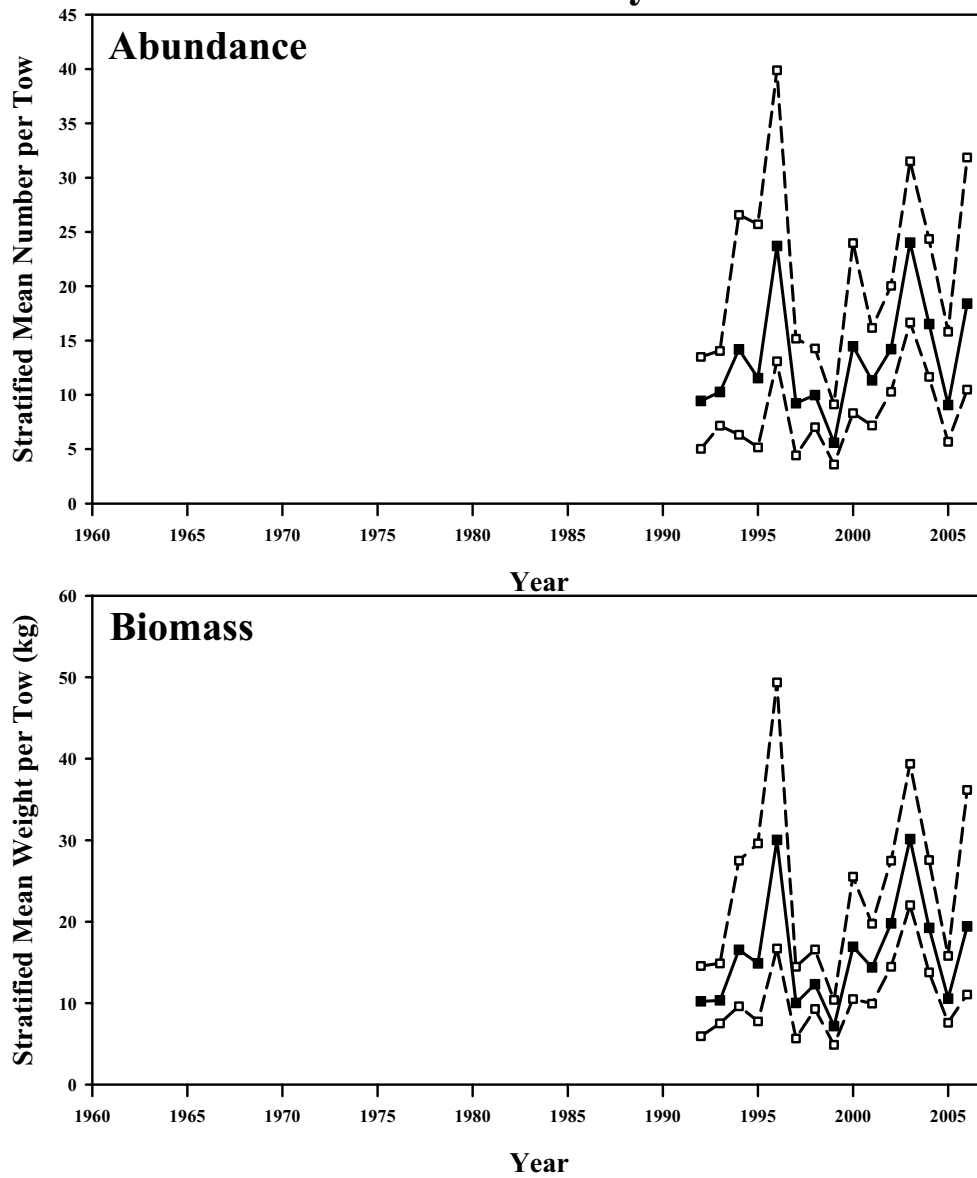


Figure B2.109. Bootstrapped abundance and biomass of clearnose skate from the NESFC winter bottom trawl survey. Mean index in solid squares, 95% confidence interval in open squares.

## Clearnose Skate - CTDEP Finfish Survey

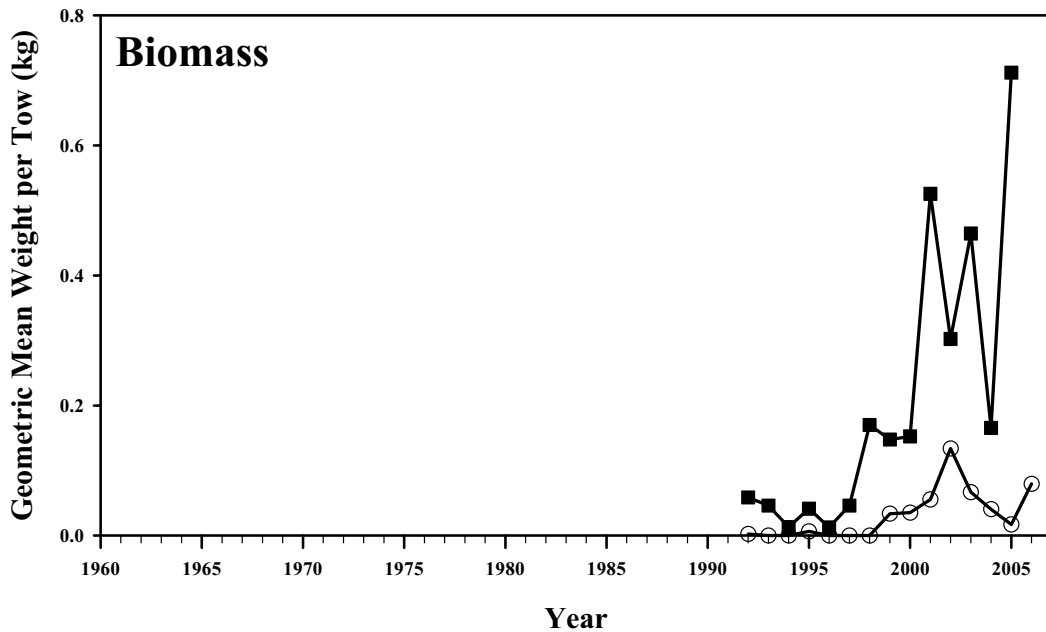
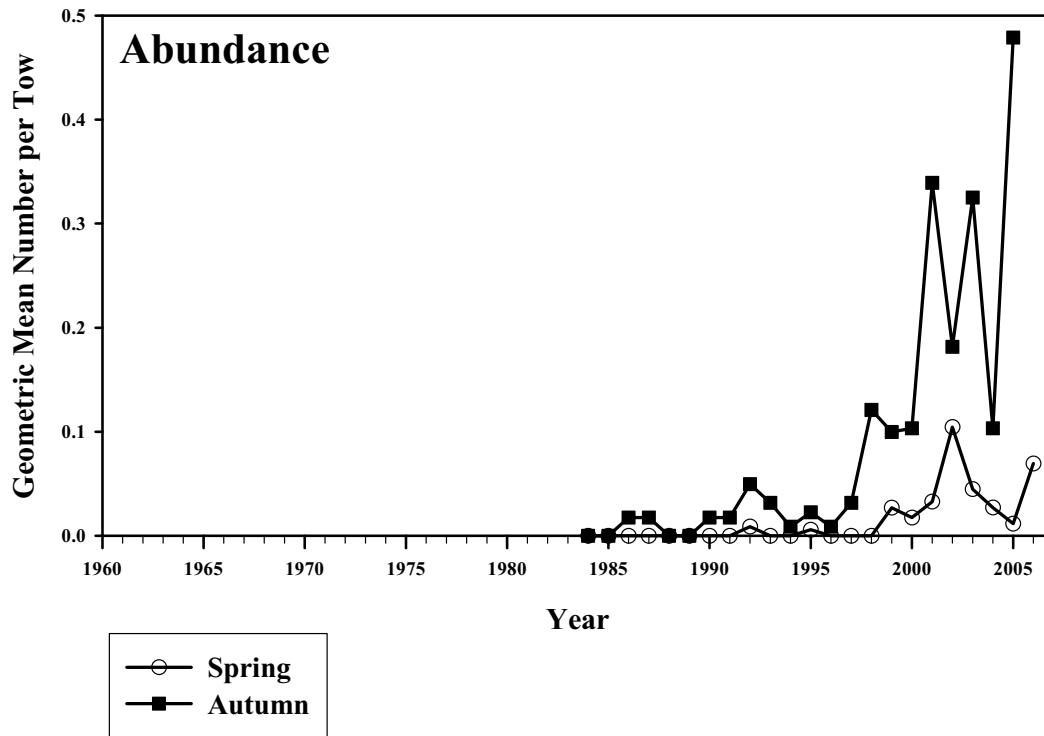
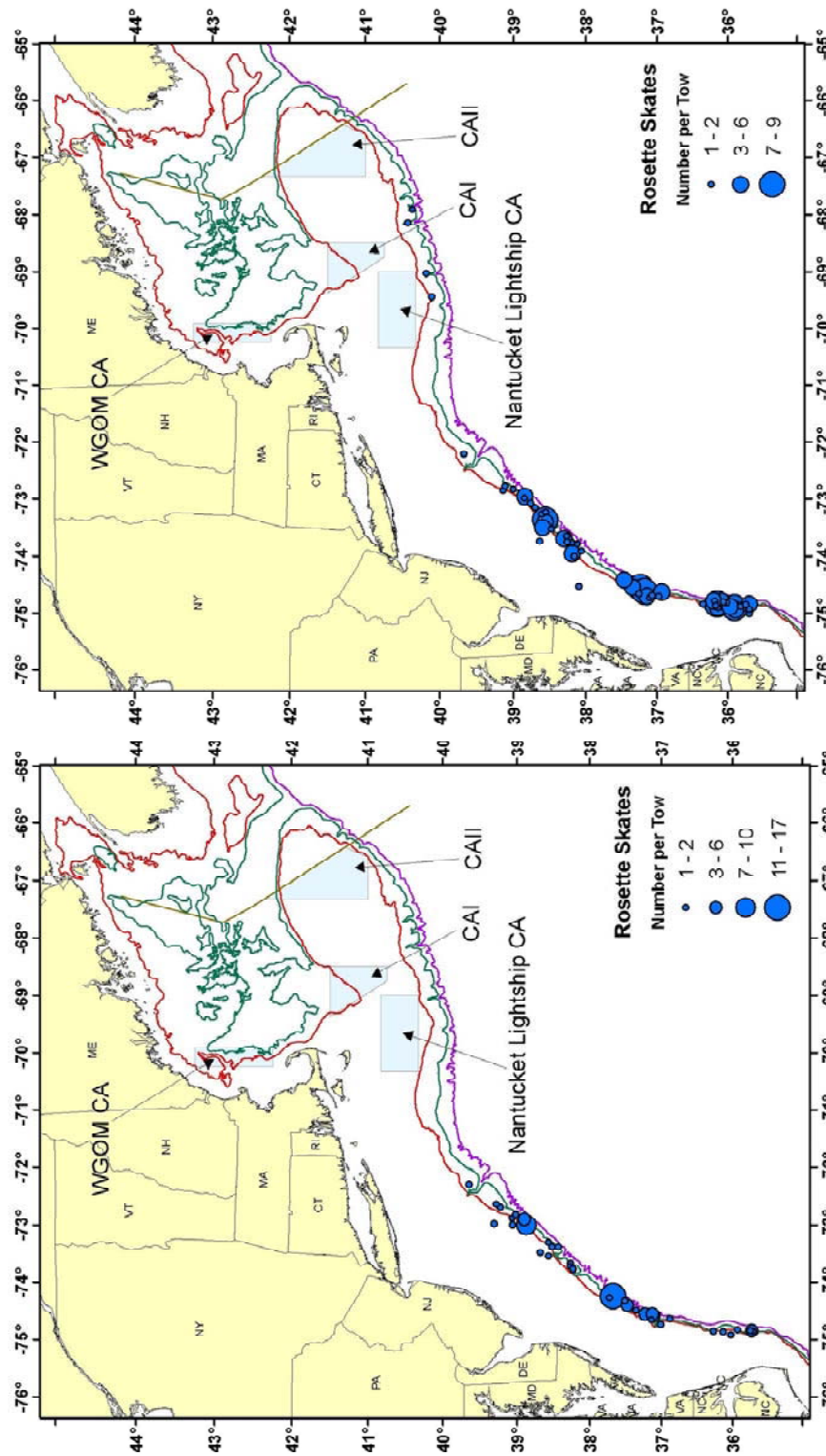


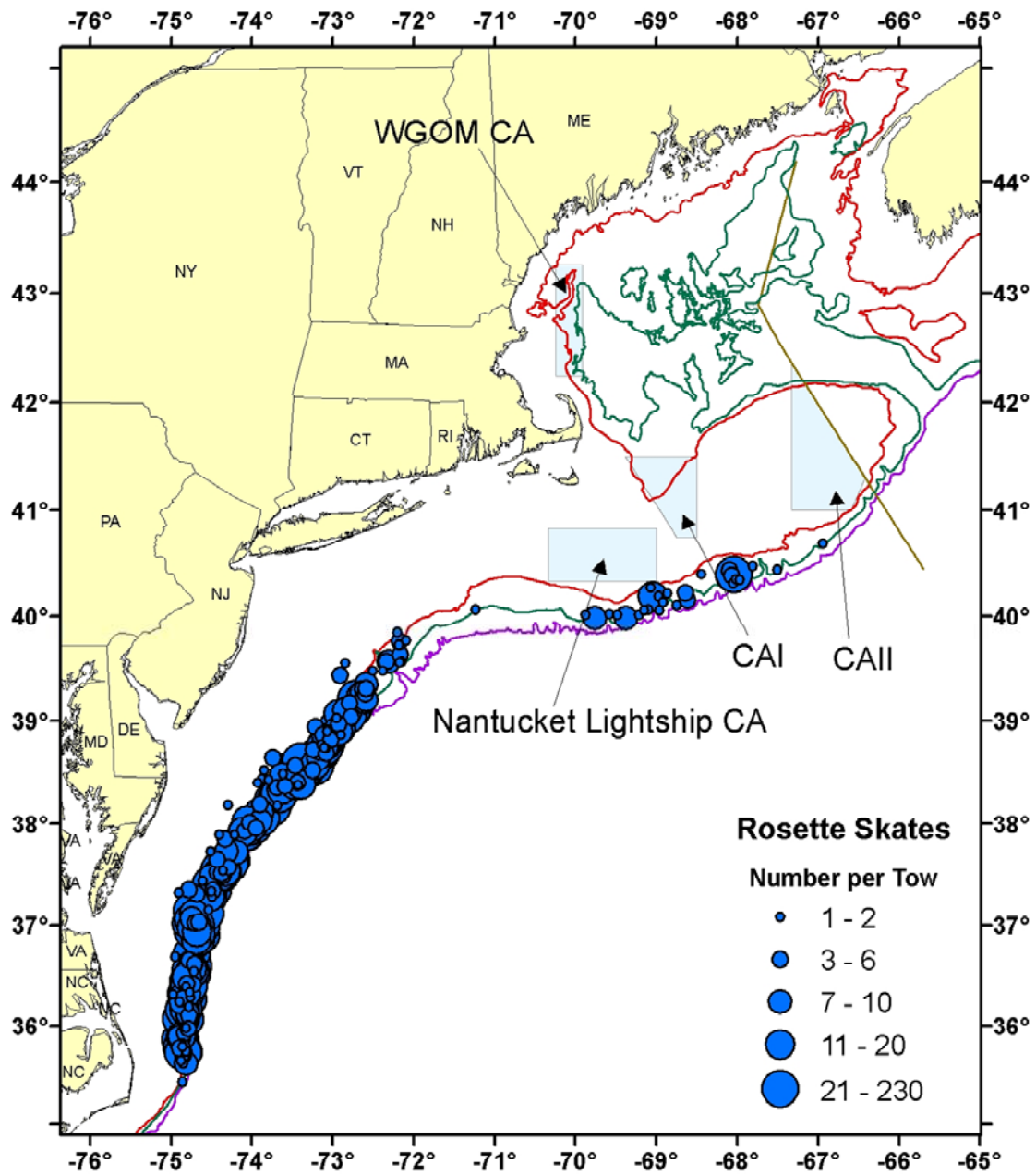
Figure B2.110. Abundance and biomass of clearnose skate from the CTDEP spring and autumn finfish bottom trawl survey in Connecticut state waters, 1984-2006.



Rosette Skates from 2000-2005 NEFSC Fall Surveys

Rosette Skates from 2000-2006 NEFSC Spring Surveys

Figure B2.111. Distribution of rosette skate from the spring and autumn NEFSC surveys from 2000-2006.



Rosette Skates from 2000-2006 NEFSC Winter Surveys

Figure B2.112. Distribution of rosette skate from the winter NEFSC surveys from 2000-2006.



## Rosette Skate Mid-Atlantic Offshore strata

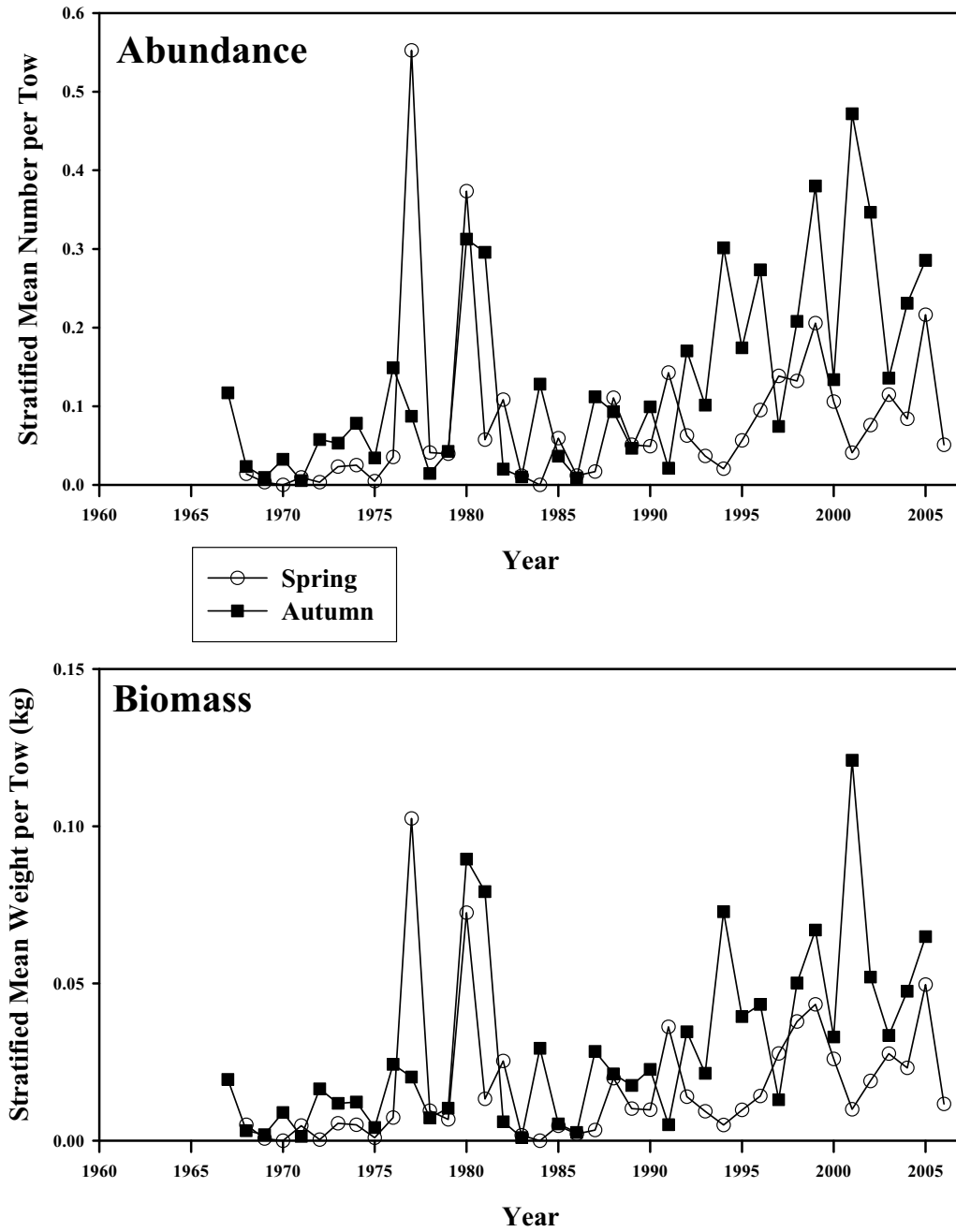


Figure B2.113. Abundance and biomass of rosette skate from the NESFC spring (circles) and autumn (squares) bottom trawl surveys from 1967-2006 in the Mid-Atlantic offshore region.

## Rosette Skate Mid-Atlantic Offshore Only - Spring Survey

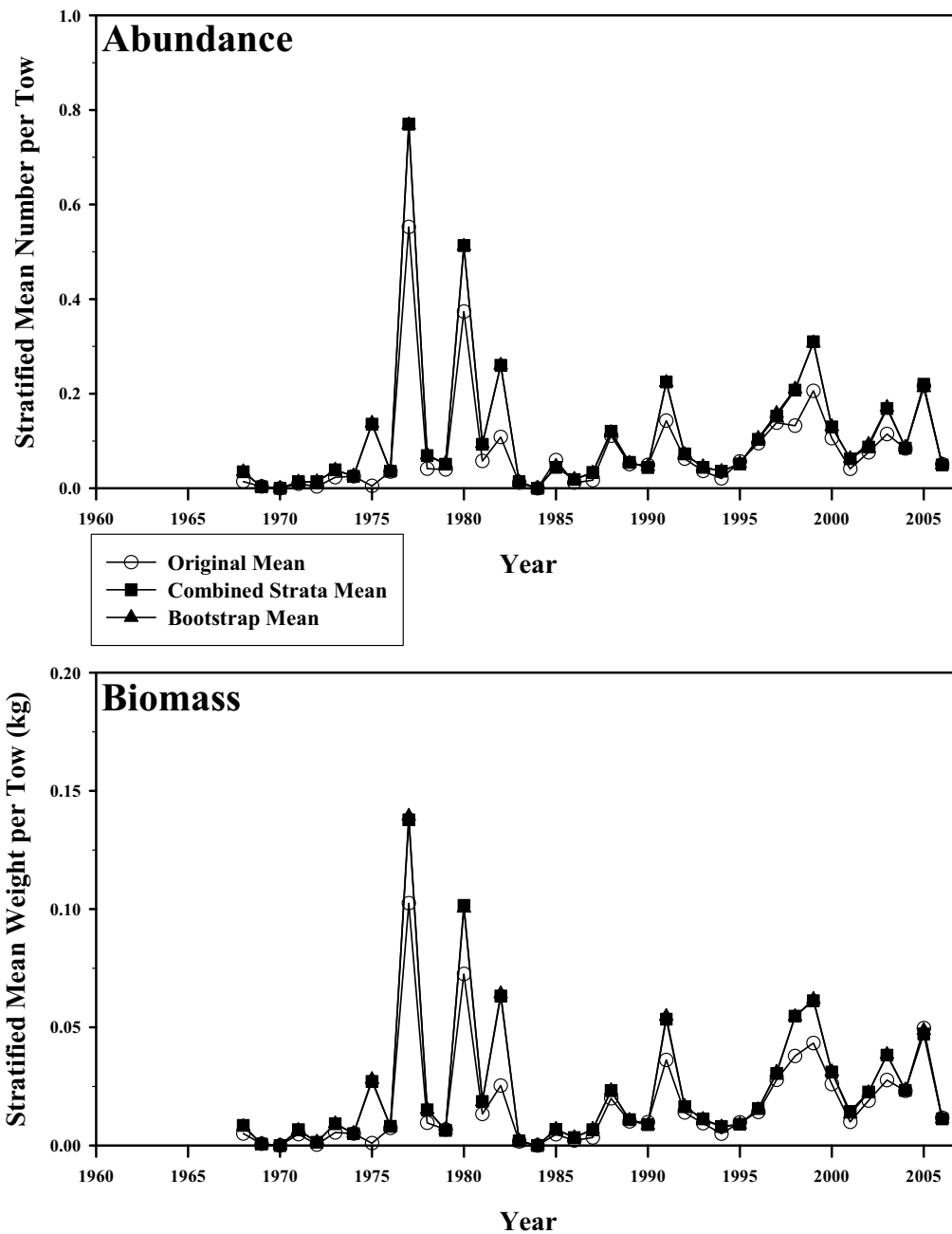


Figure B2.114. Abundance and biomass of rosette skate from the NESFC spring bottom trawl surveys from 1968-2006 in the Mid-Atlantic offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Rosette Skate - Spring Survey Mid-Atlantic Offshore Strata Only

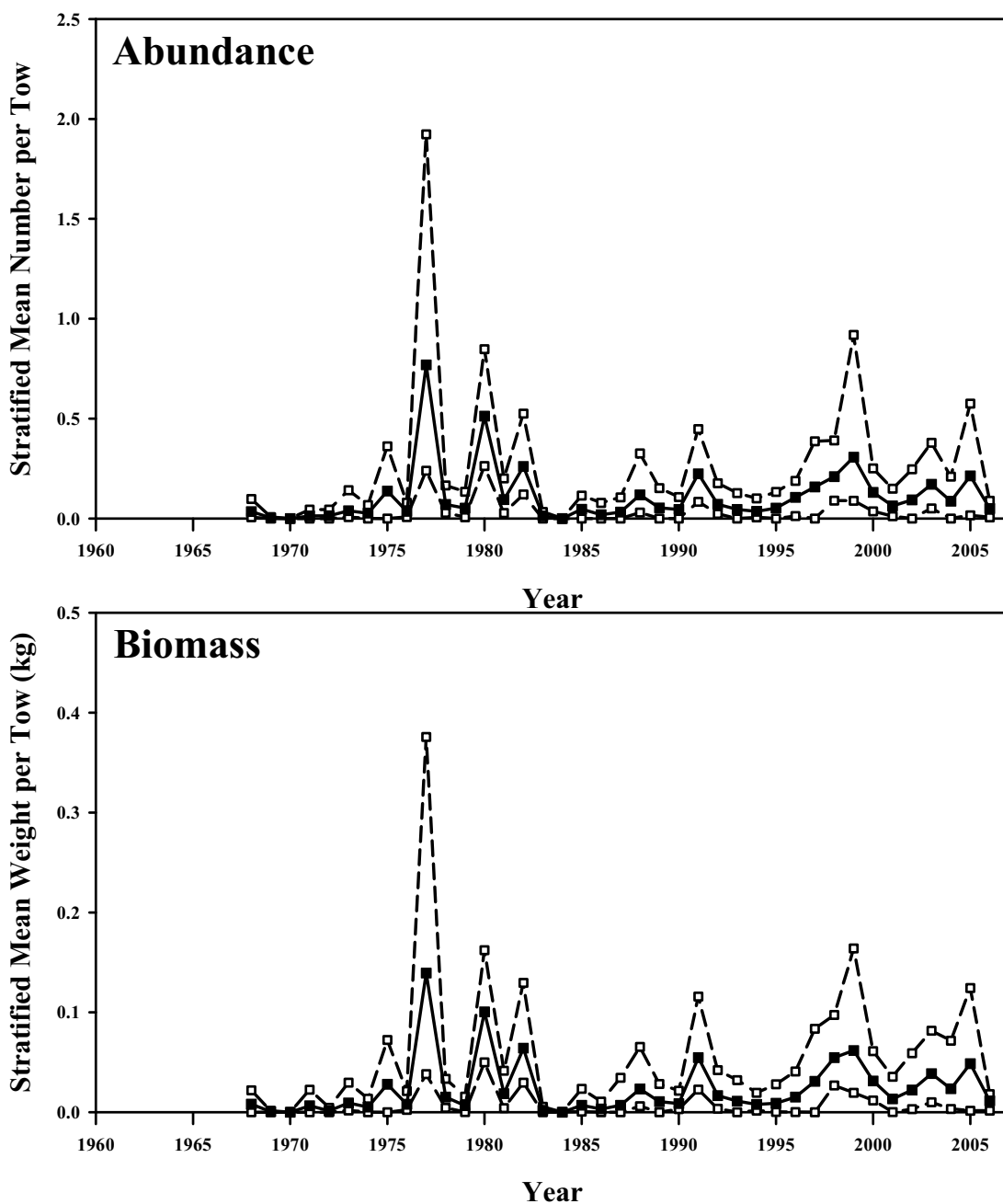


Figure B2.115. Bootstrapped abundance and biomass of rosette skate from the NESFC spring bottom trawl survey in the Mid-Atlantic offshore region. Mean index in solid squares, 95% confidence interval in open squares.

## Rosette Skate Mid-Atlantic Offshore Only - Autumn Survey

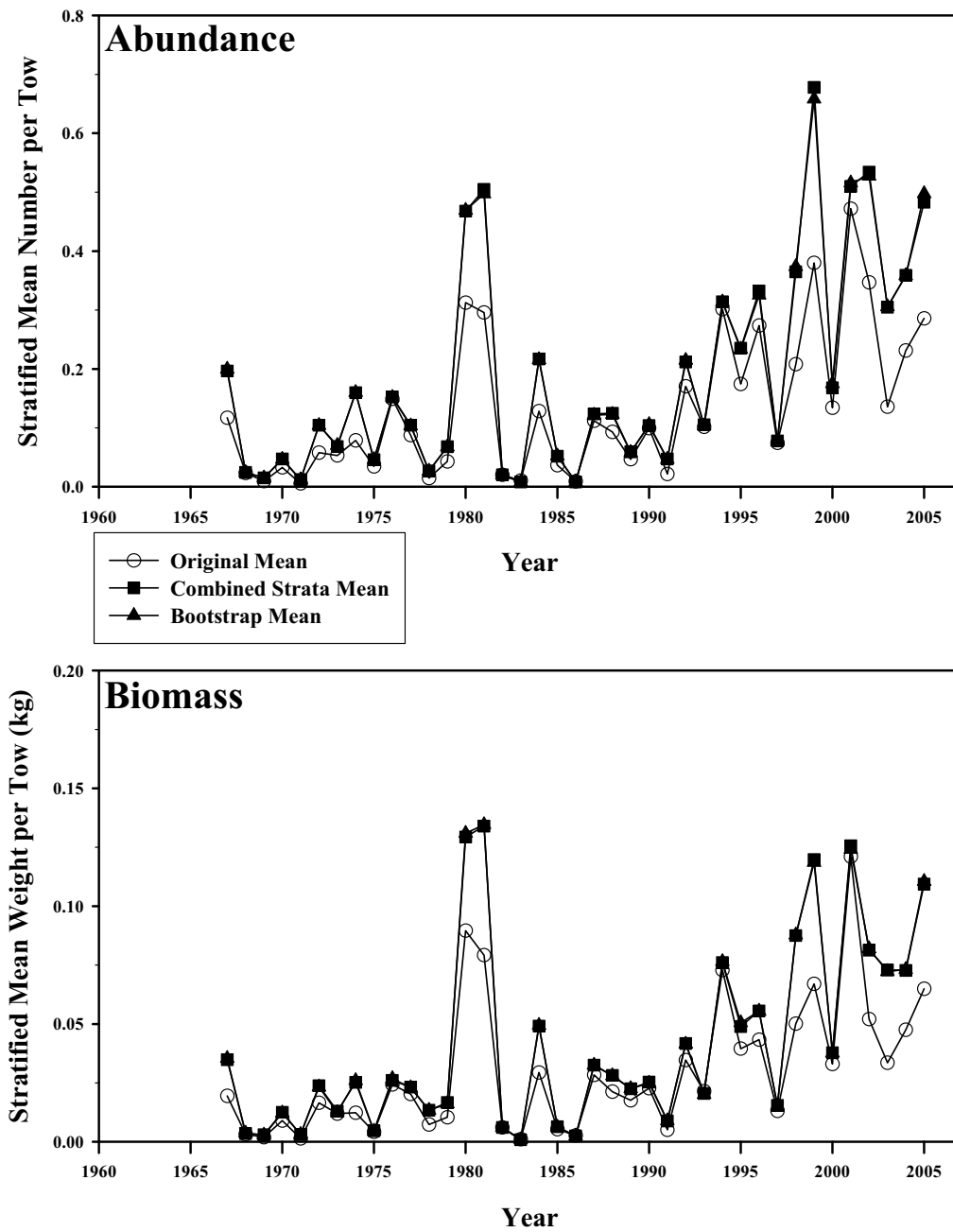


Figure B2.116. Abundance and biomass of rosette skate from the NESFC autumn bottom trawl surveys from 1967-2005 in the Mid-Atlantic offshore region. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Rosette Skate - Autumn Survey Mid-Atlantic Offshore Strata Only

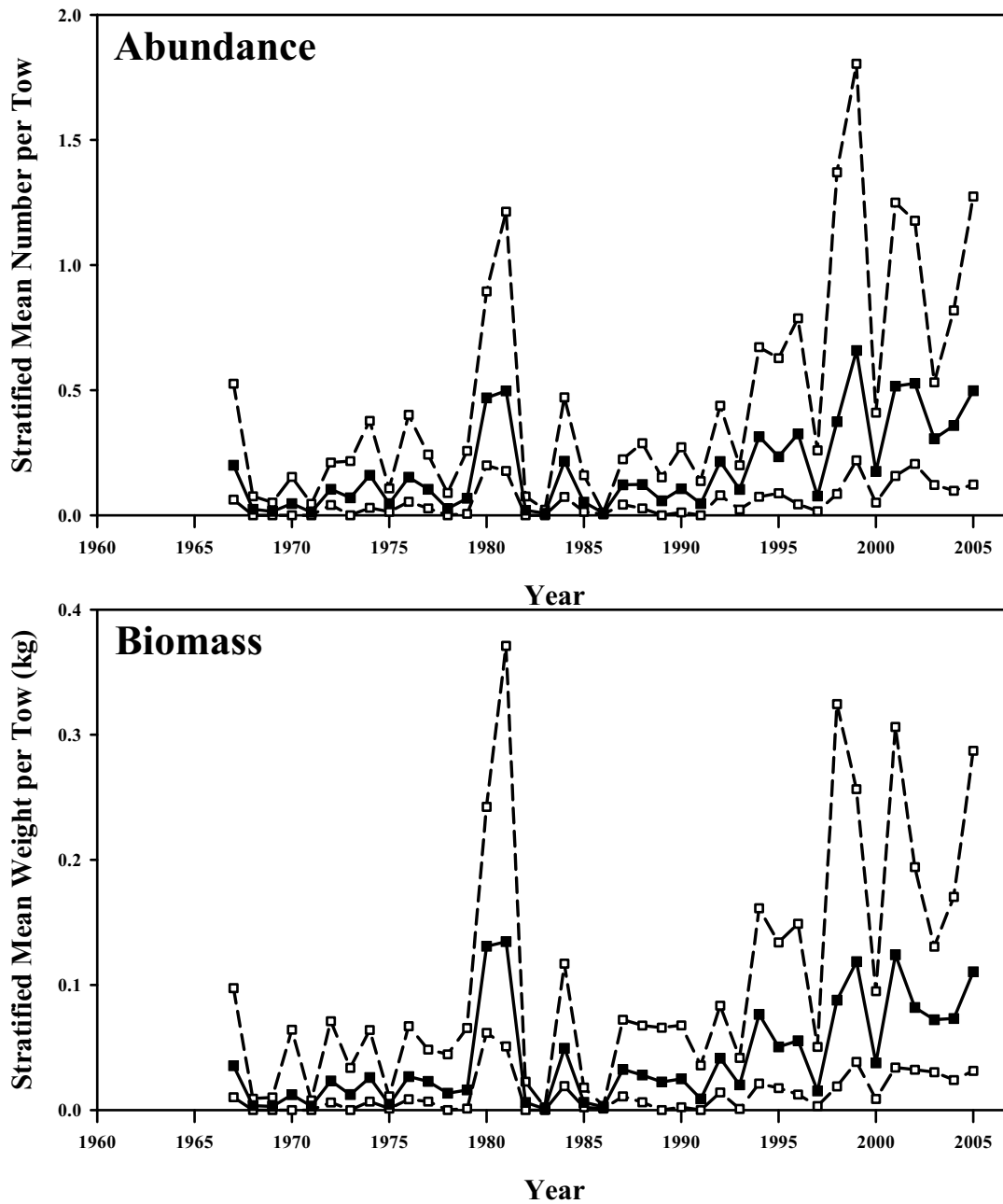


Figure B2.117. Bootstrapped abundance and biomass of rosette skate from the NESFC autumn bottom trawl survey in the Mid-Atlantic offshore region. Mean index in solid squares, 95% confidence interval in open squares.

# Rosette Skate

## Percentiles of Length Composition

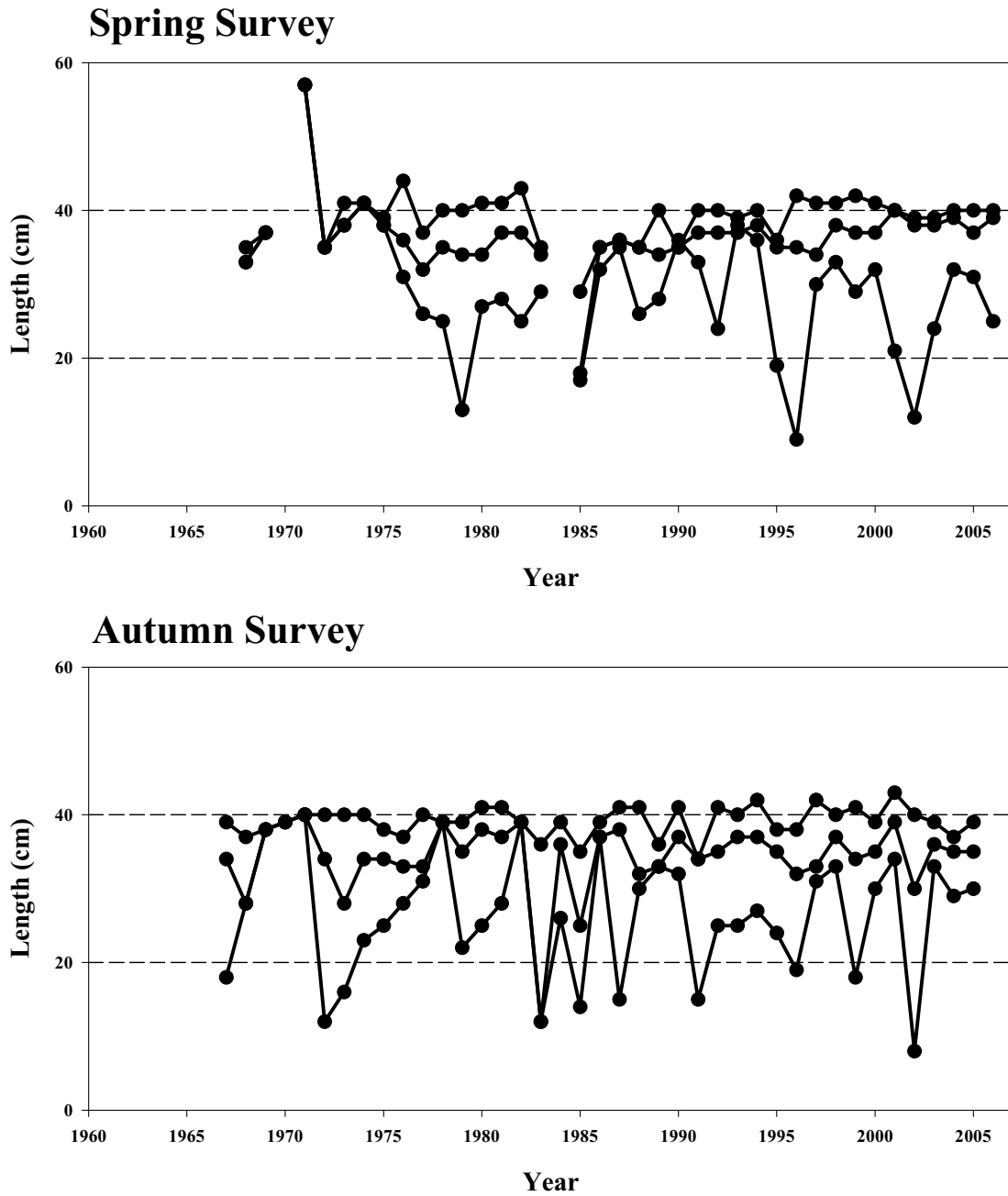


Figure B2.118. Percentiles of length composition (5, 50, and 95) of rosette skate from the NESFC spring and autumn bottom trawl surveys from 1967-2006 in the Mid-Atlantic offshore region.

Spring Survey

Autumn Survey

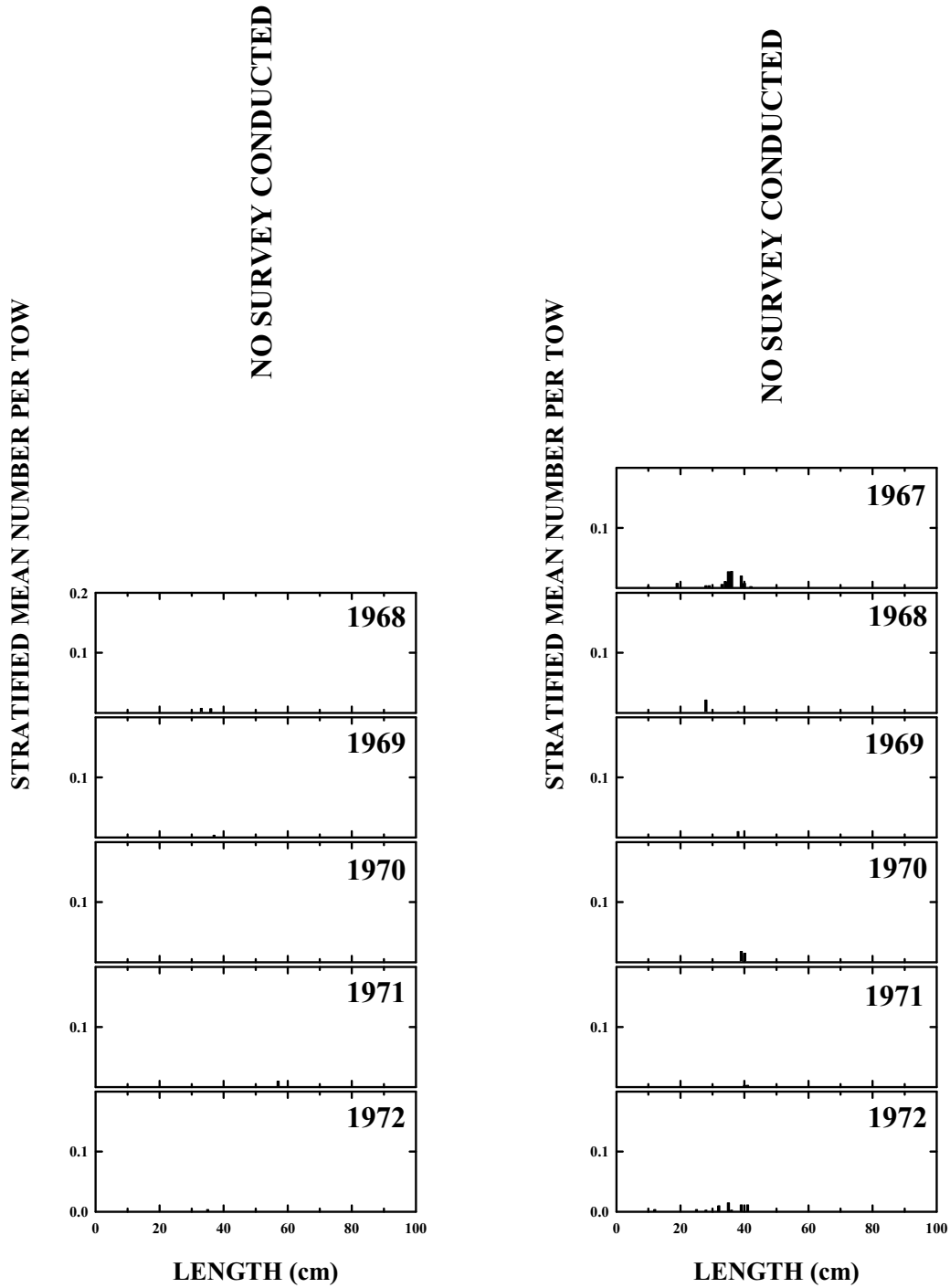


Figure B2.119. Rosette skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Mid-Atlantic offshore region, 1967-1972.

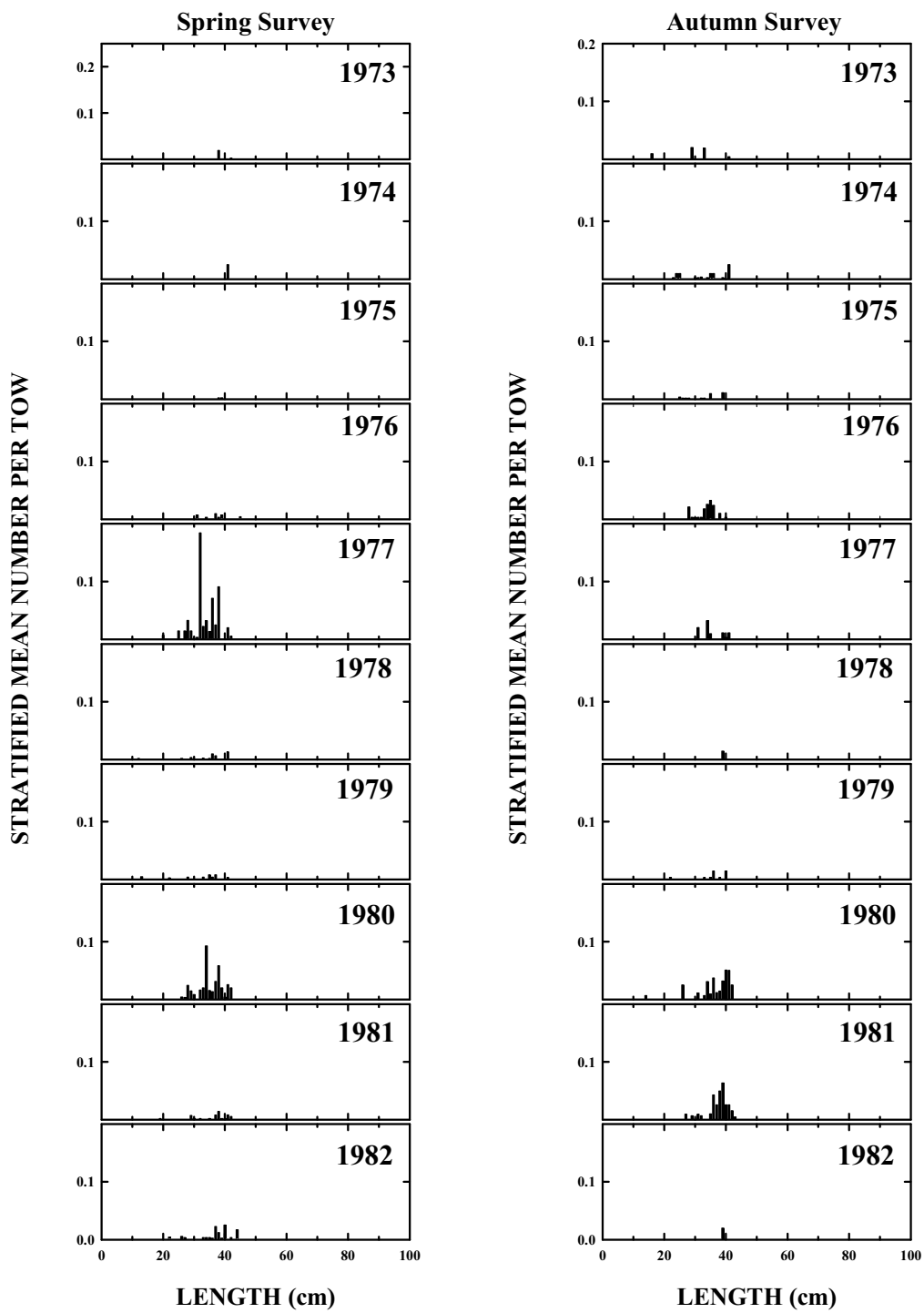


Figure B2.120. Rosette skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Mid-Atlantic offshore region, 1973-1982.



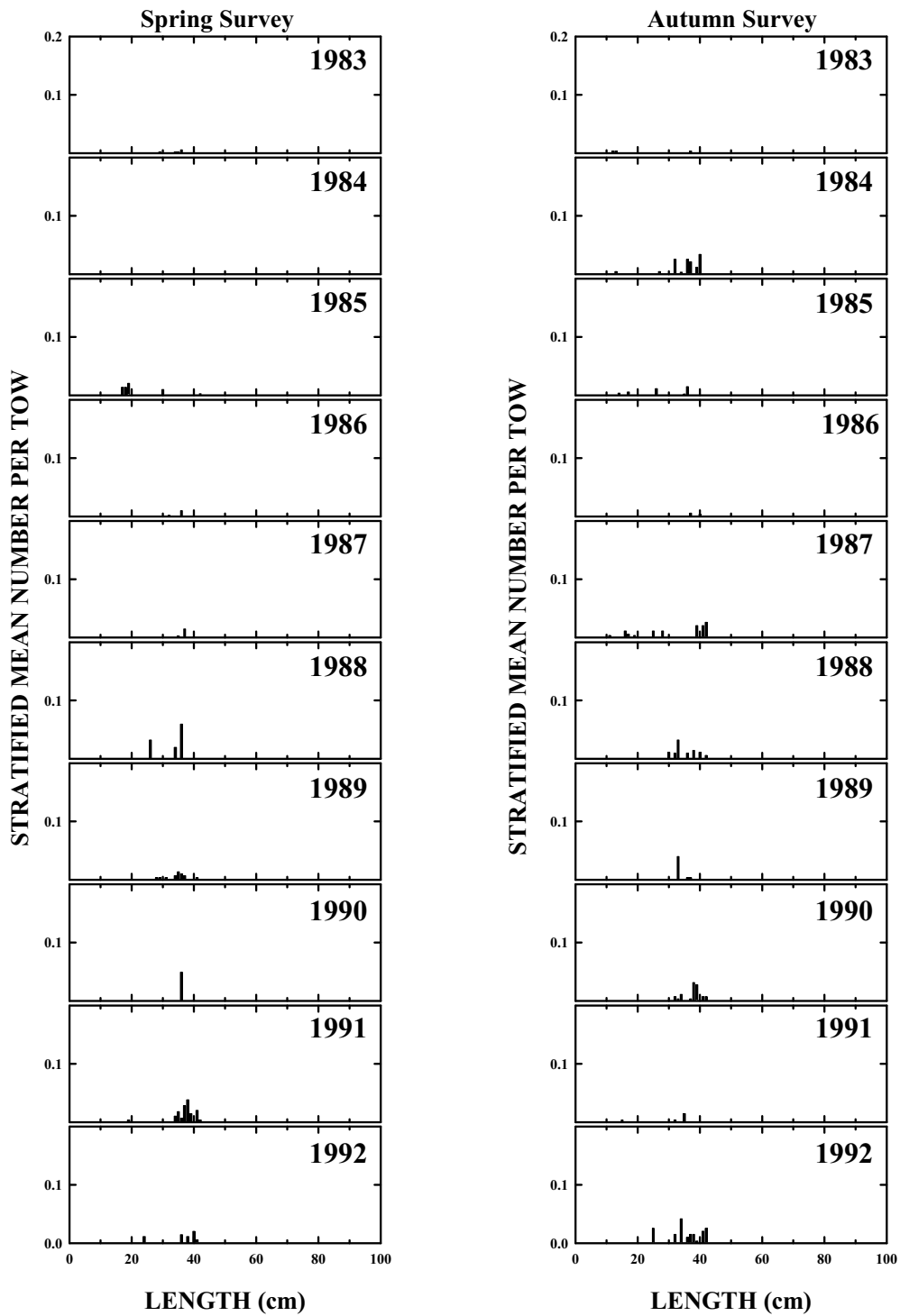


Figure B2.121. Rosette skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Mid-Atlantic offshore region, 1983-1992.

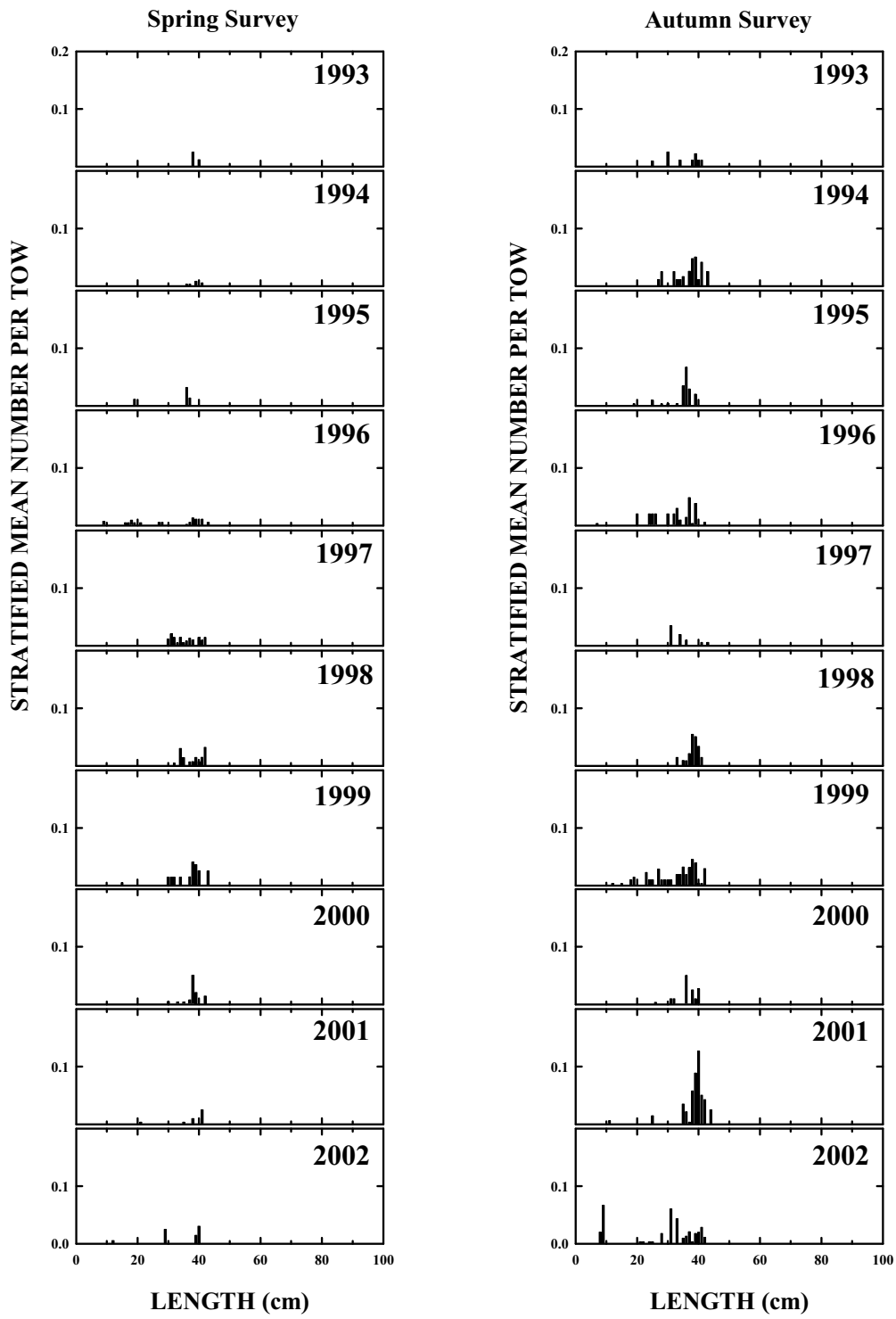


Figure B2.122. Rosette skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Mid-Atlantic offshore region, 1993-2002.

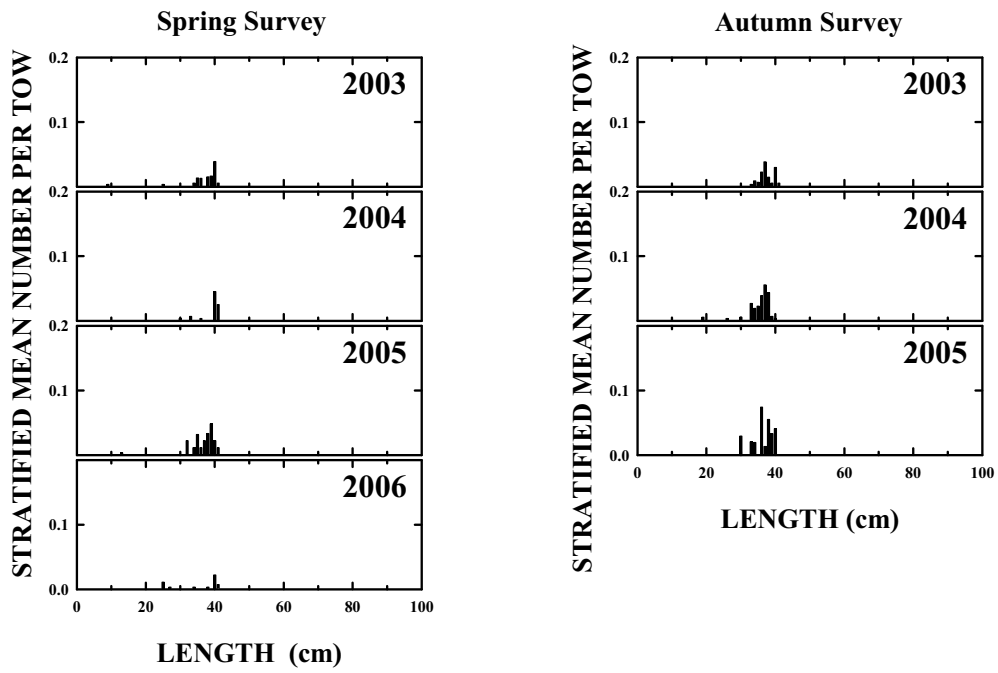


Figure B2.123. Rosette skate length composition from the NEFSC spring and autumn bottom trawl surveys in the Mid-Atlantic offshore region, 2003-2006.

## Rosette Skate Winter Survey

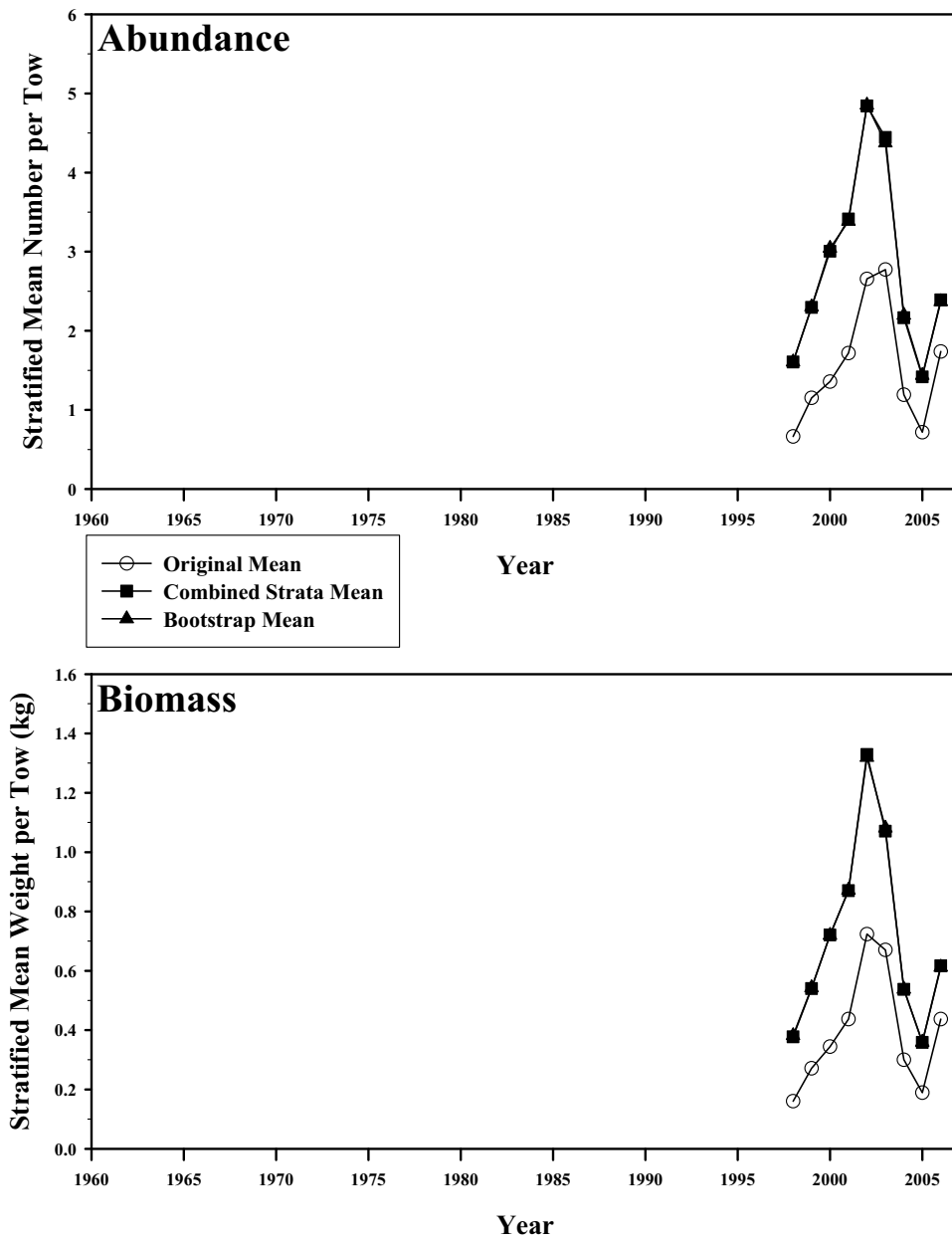


Figure B2.124. Abundance and biomass of rosette skate from the NESFC winter bottom trawl surveys from 1998-2006. The circles represent the original stratified mean, the squares represent the mean combining strata for bootstrapping, and the triangles represent the bootstrapped mean.

## Rosette Skate Winter Survey

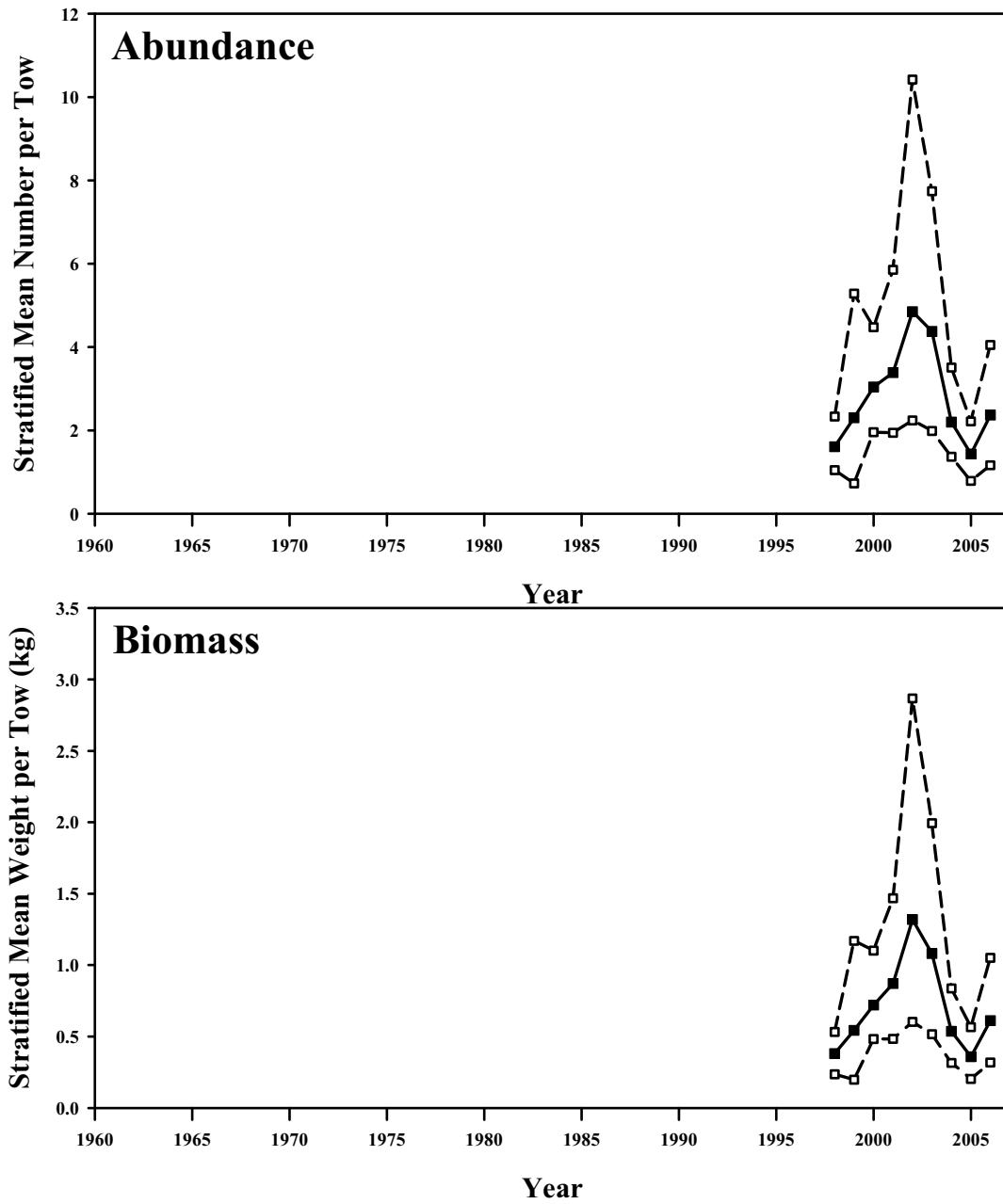


Figure B2.125. Bootstrapped abundance and biomass of rosette skate from the NESFC winter bottom trawl survey. Mean index in solid squares, 95% confidence interval in open squares.

# Skate Complex SSB Indices

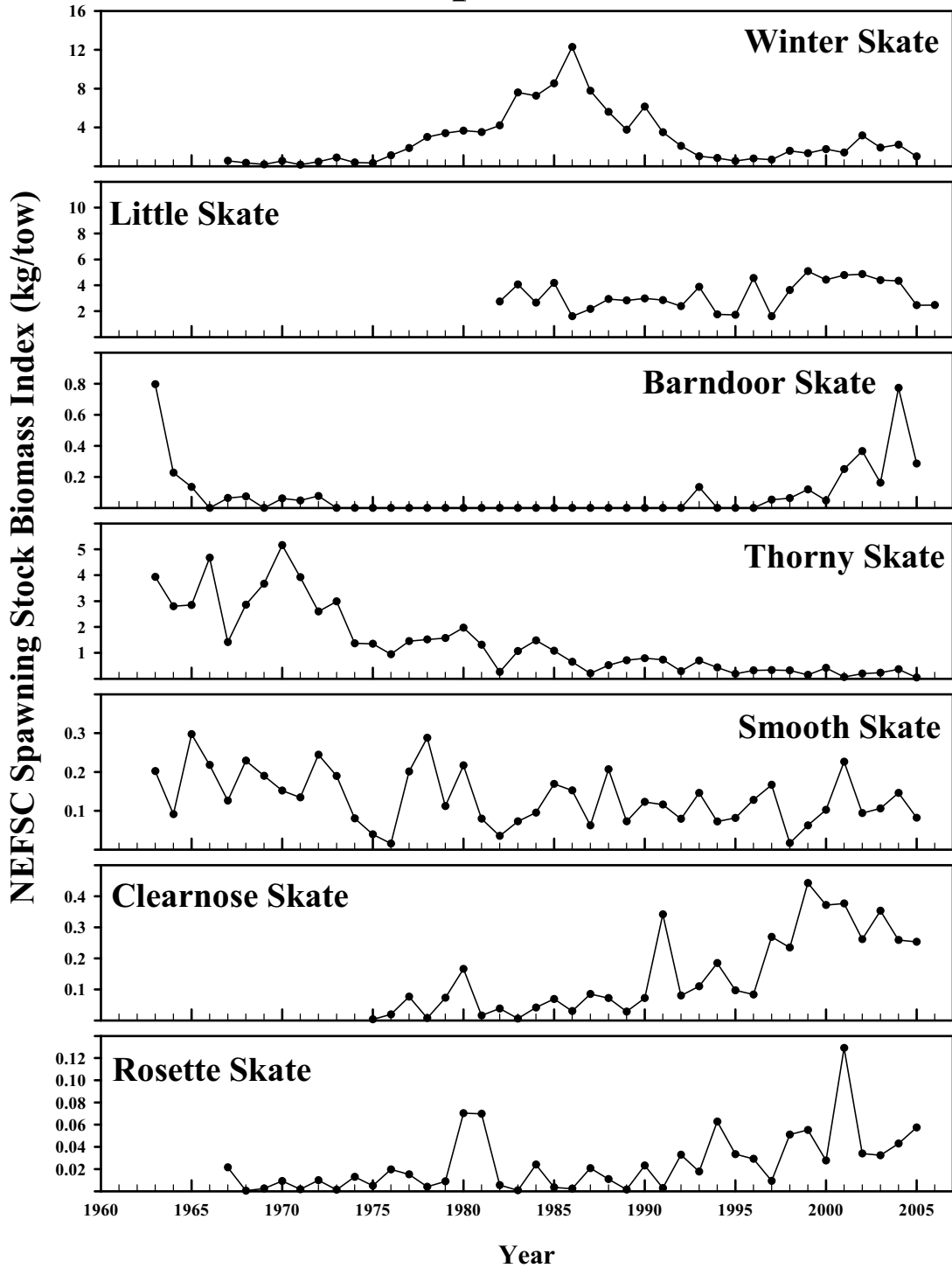


Figure B2.126. Trends in spawning stock biomass indices for seven species of skates.

FIGURES B2.127-B2.141.

(EDITOR'S NOTE: BASED ON THE REVIEWER'S COMMENTS, THESE FIGURES WERE NOT INCLUDED IN THIS REPORT. THE FIGURES DEALT WITH ESTIMATES OF FISHING MORTALITY RATE.)