A Spatially-Explicit Model of Anadromous Alosine Hotspots at Sea

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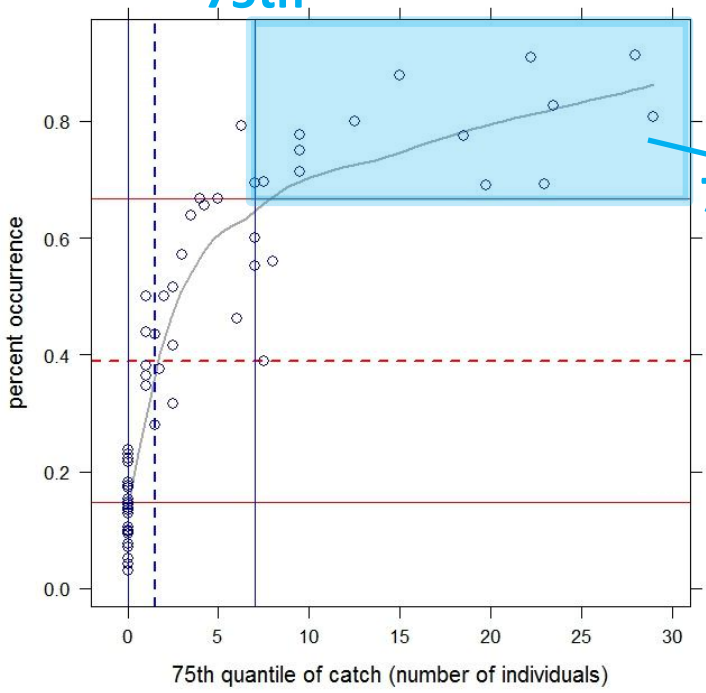
Seasonal Model of River Herring Distribution at Sea

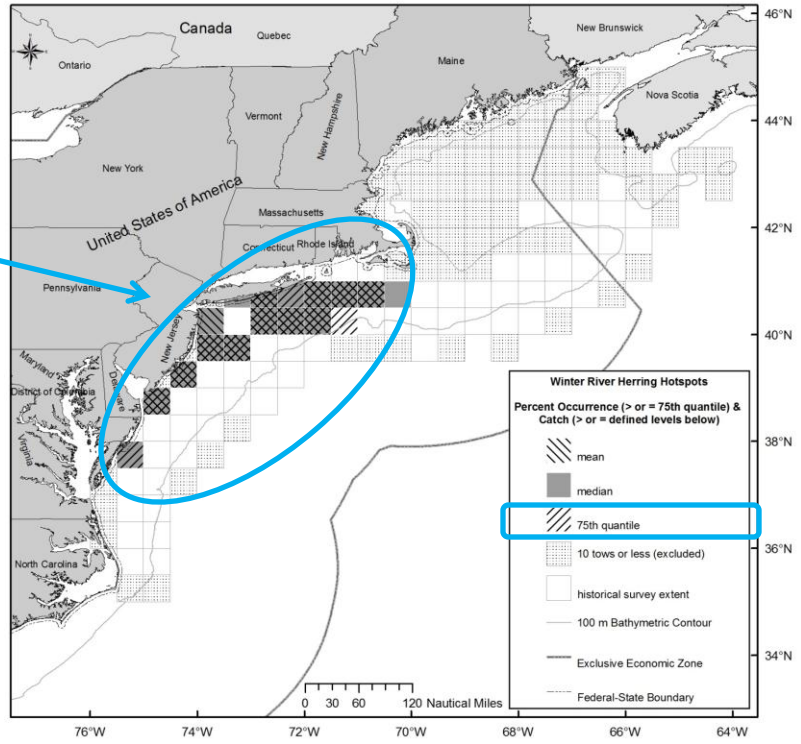
Example for Winter, 1964-2007

High Survey Catch (x-axis) and High Percent Occurrence (y-axis) 75th



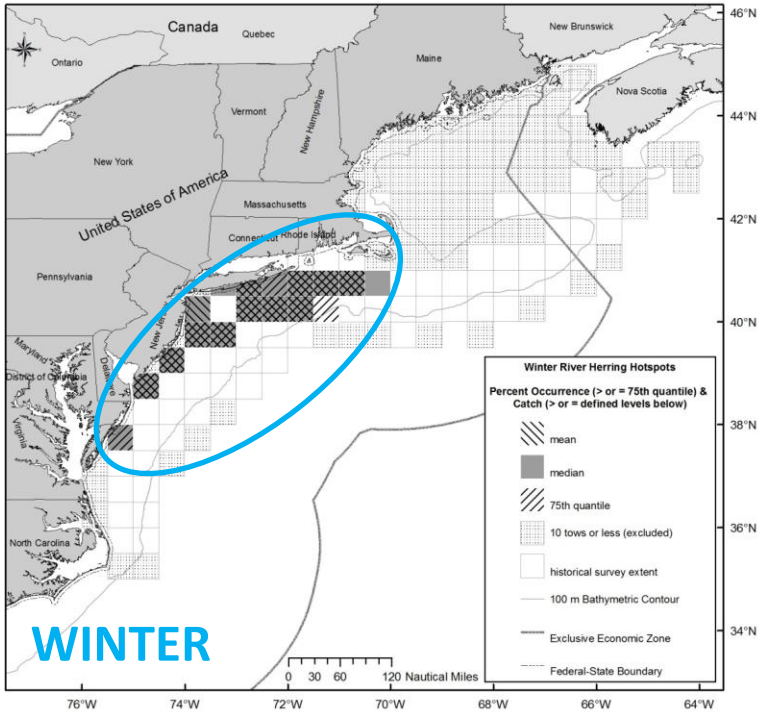
75th

Survey-based hotspots



Data from seasonal NMFS bottom-trawl surveys, 1948-2009

Areas where river herring are likely encountered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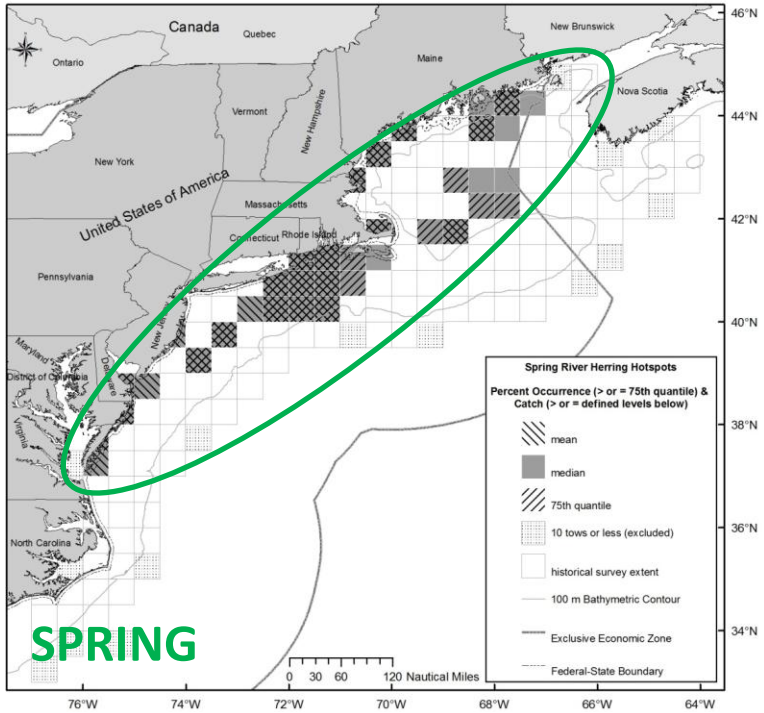
New Jersey
Maryland
Delaware
District of Columbia
Virginia
North Carolina
WINTER
Winter River Herring Hotspots
Percent Occurrence (> or = 75th quantile) & Catch (> or = defined levels below)
mean
median
75th quantile
10 tows or less (excluded)
historical survey extent
100 m Bathymetric Contour
Exclusive Economic Zone
Federal-State Boundary
0 30 60 120 Nautical Miles
46°N
44°N
42°N
40°N
38°N
36°N
34°N
76°W
74°W
72°W
70°W
68°W
66°W
64°W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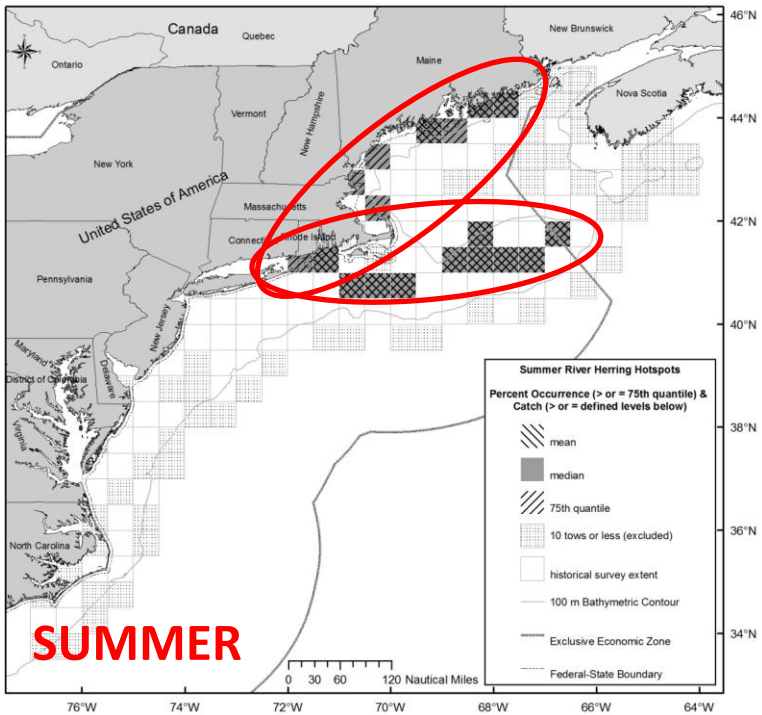
New Jersey
Maryland
Delaware
District of Columbia
Virginia
North Carolina
SPRING
Spring River Herring Hotspots
Percent Occurrence (> or = 75th quantile) & Catch (> or = defined levels below)
mean
median
75th quantile
10 tows or less (excluded)
historical survey extent
100 m Bathymetric Contour
Exclusive Economic Zone
Federal-State Boundary
0 30 60 120 Nautical Miles
46°N
44°N
42°N
40°N
38°N
36°N
34°N
76°W
74°W
72°W
70°W
68°W
66°W
64°W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New Jersey
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Delaware
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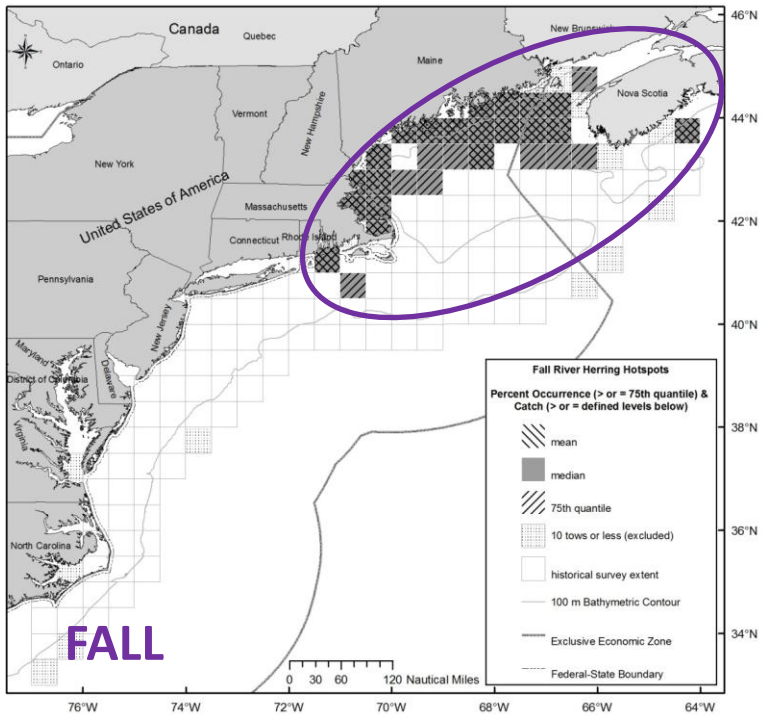
Virginia
North Carolina
SUMMER
Summer River Herring Hotspots
Percent Occurrence (> or = 75th quantile) & Catch (> or = defined levels below)
mean
median
75th quantile
10 tows or less (excluded)
historical survey extent
100 m Bathymetric Contour
Exclusive Economic Zone
Federal-State Boundary
0 30 60 120 Nautical Miles
46°N
44°N
42°N
40°N
38°N
36°N
34°N
76°W
74°W
72°W
70°W
68°W
66°W
64°W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Delaware
District of Columbia
Virginia
North Carolina
FALL
Fall River Herring Hotspots
Percent Occurrence (> or = 75th quantile) & Catch (> or = defined levels below)
mean
median
75th quantile
10 tows or less (excluded)
historical survey extent
100 m Bathymetric Contour
Exclusive Economic Zone
Federal-State Boundary
0 30 60 120 Nautical Miles
46°N
44°N
42°N
40°N
38°N
36°N
34°N
76°W
74°W
72°W
70°W
68°W
66°W
64°W