

**Trends in Mean Length and Weight at Age
for Selected Groundfish Stocks.**

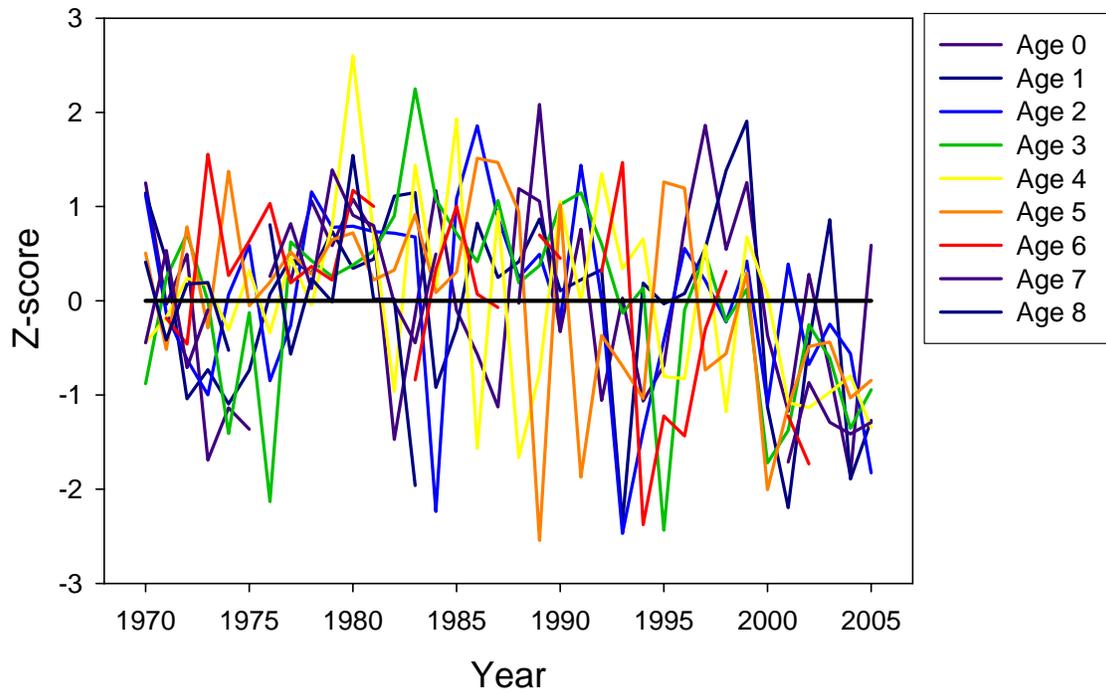
by

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Woods Hole Laboratory
Woods Hole, Ma.
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Georges Bank Cod Autumn Length at Age



Georges Bank Cod Autumn Weight at Age

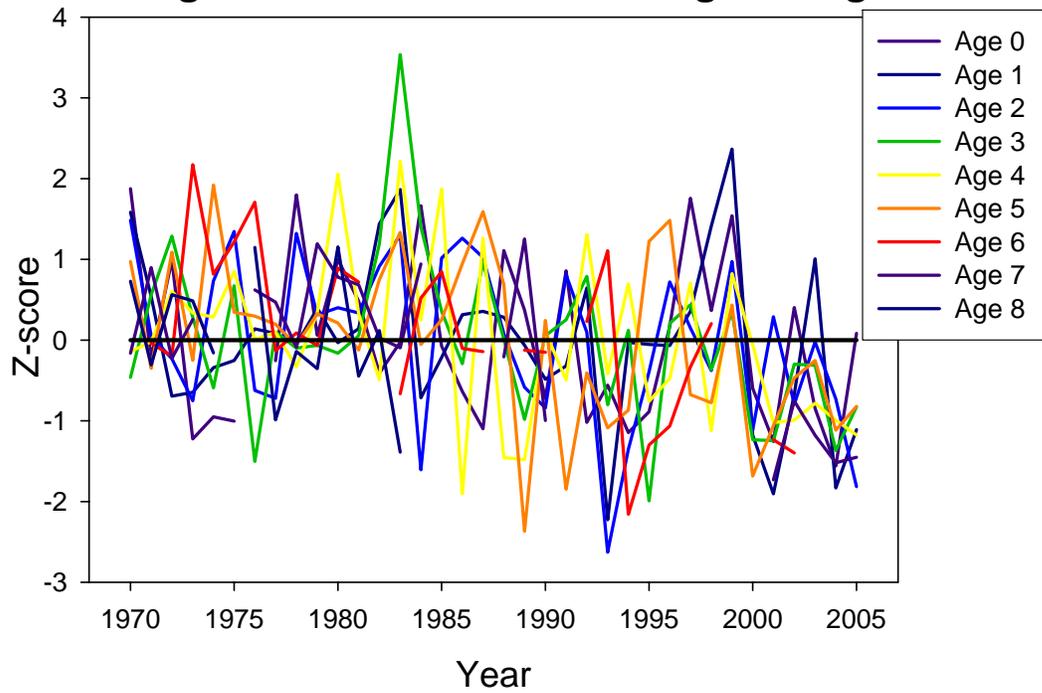


Figure 6.1.A1. Georges Bank cod Z-scores of stratified mean length (upper panel) and weight (lower panel) at age from autumn bottom trawl research surveys during 1970-2005.

	92	93	94	95	96	97	98	99	00	01	02	03	04	05
Autumn_Mean_Length age_0														
Autumn_Mean_Length age_1														
Autumn_Mean_Length age_2														
Autumn_Mean_Length age_3														
Autumn_Mean_Length age_4														
Autumn_Mean_Length age_5														
Autumn_Mean_Length age_6														
Autumn_Mean_Length age_7														

Autumn_Mean_weight age_0														
Autumn_Mean_weight age_1														
Autumn_Mean_weight age_2														
Autumn_Mean_weight age_3														
Autumn_Mean_weight age_4														
Autumn_Mean_weight age_5														
Autumn_Mean_weight age_6														
Autumn_Mean_weight age_7														

Autumn_Mean_Number age_0														
Autumn_Mean_Number age_1														
Autumn_Mean_Number age_2														
Autumn_Mean_Number age_3														
Autumn_Mean_Number age_4														
Autumn_Mean_Number age_5														
Autumn_Mean_Number age_6														
Autumn_Mean_Number age_7														

Legend

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Figure 6.1.A2 cont. Quintiles of stratified mean length, weight and number per tow of Georges Bank cod during autumn bottom trawl research surveys during 1992-2005.

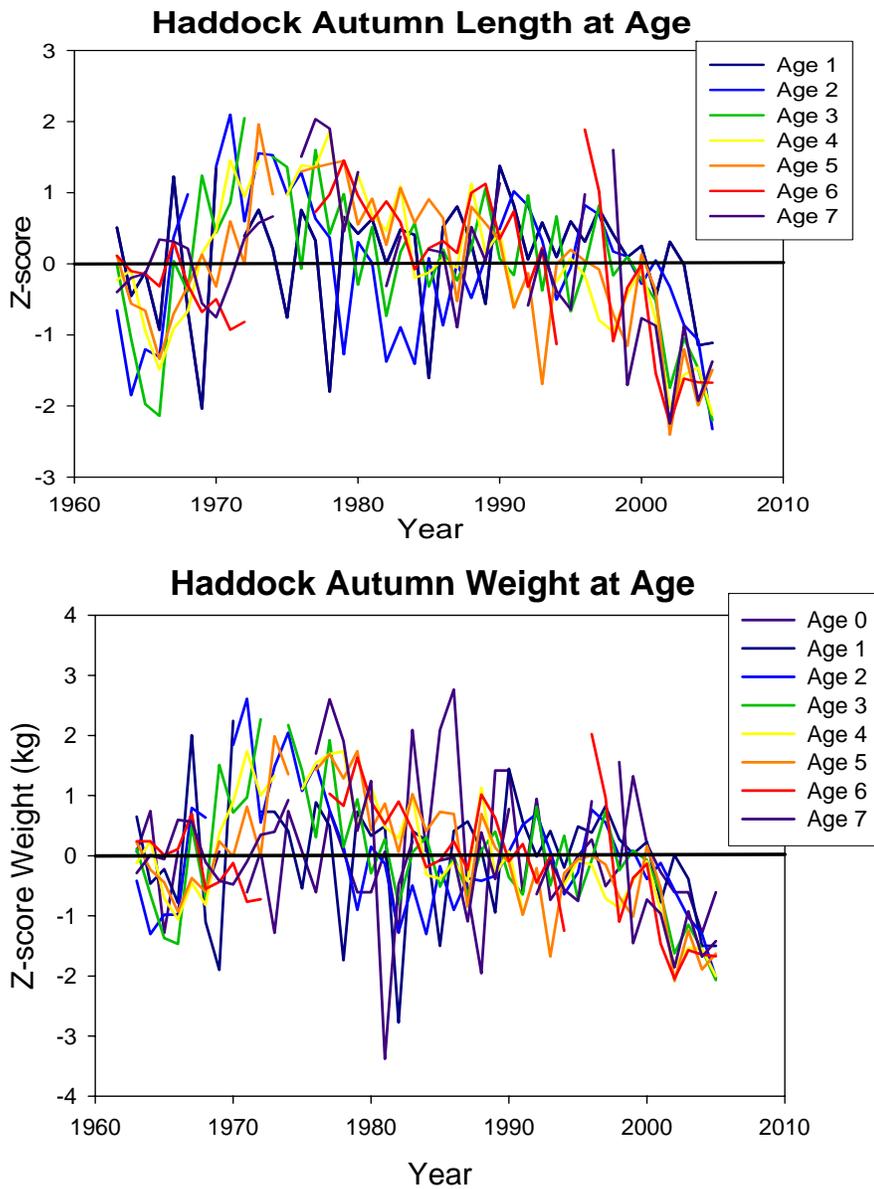


Figure 6.1.B1. Georges Bank haddock Z-scores of stratified mean length (upper panel) and weight (lower panel) at age from autumn bottom trawl research surveys during 1963-2005.

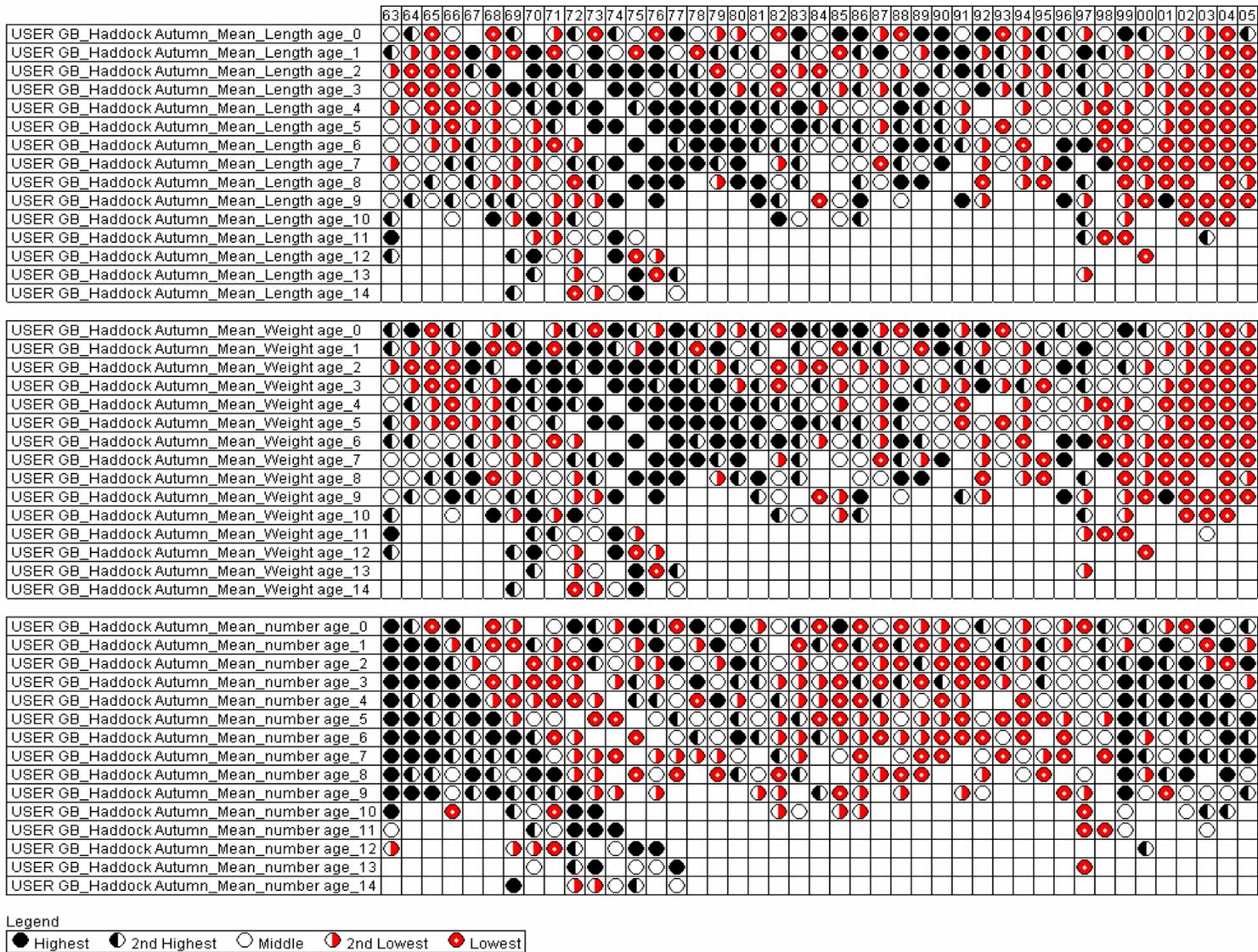


Figure 6.1.B2. Quintiles of stratified mean length, weight and number per tow of Georges Bank haddock during autumn bottom trawl research surveys during 1963-2005.

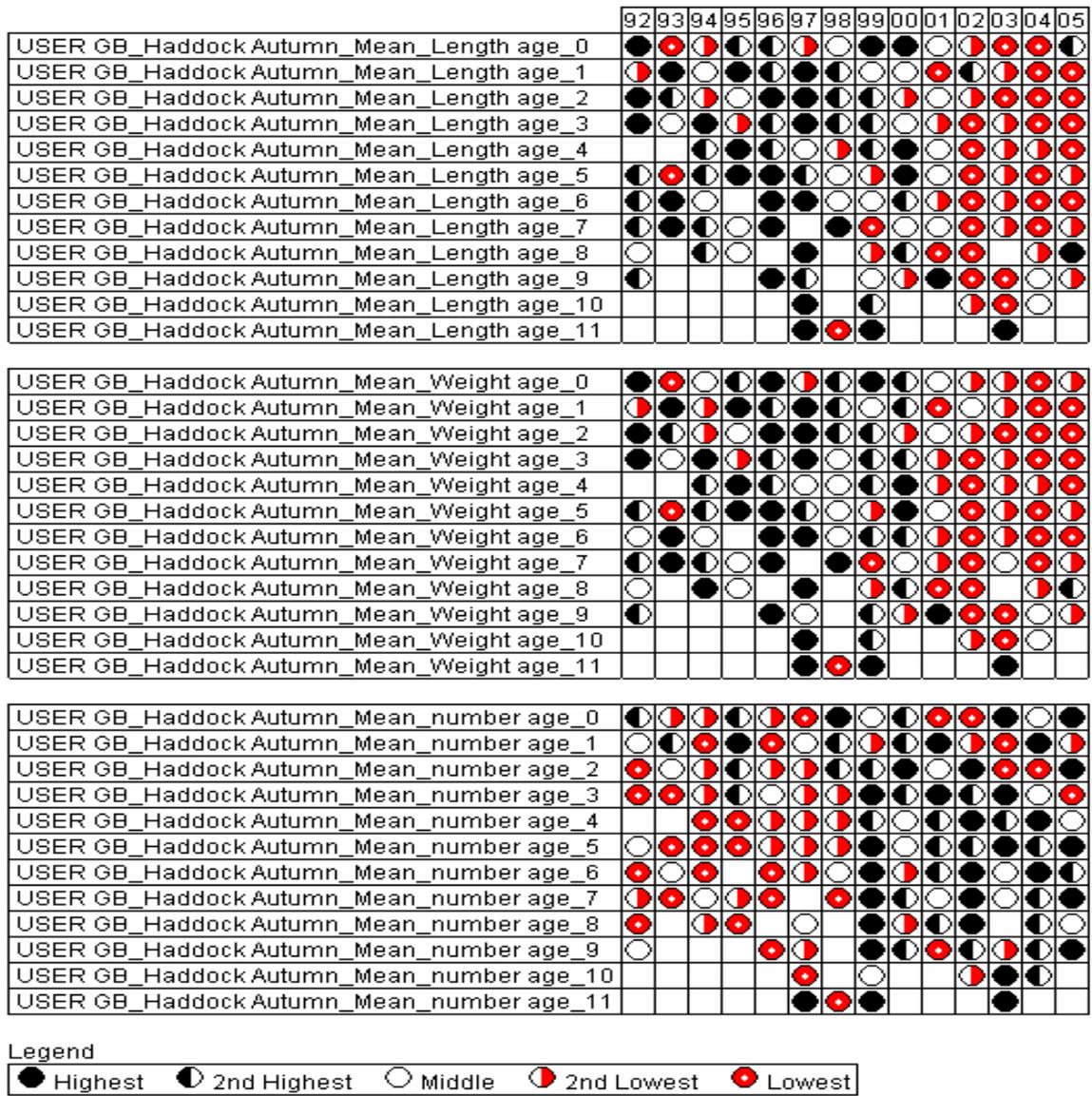


Figure 6.1.B2 cont. Quintiles of stratified mean length, weight and number per tow of Georges Bank haddock during autumn bottom trawl research surveys during 1992-2005

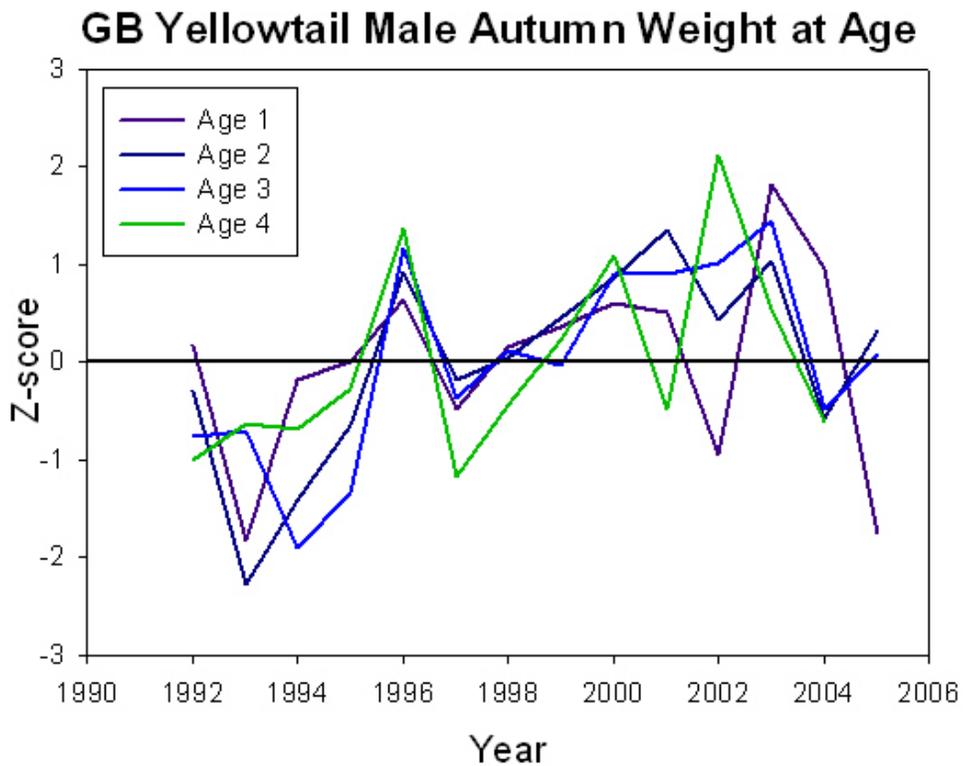
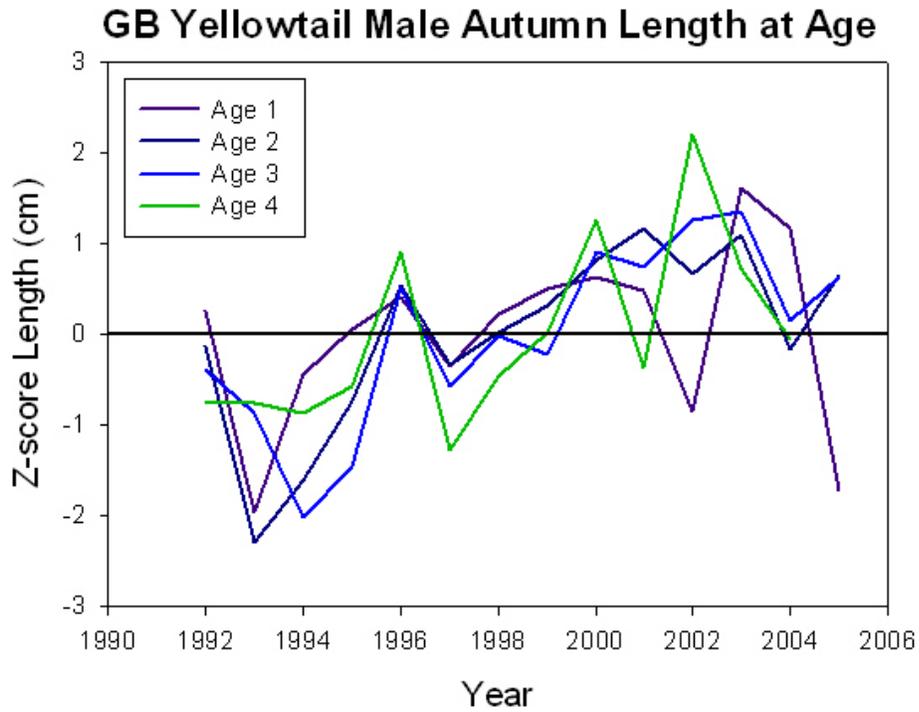


Figure 6.1.C1. Georges Bank yellowtail flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males from autumn bottom trawl research surveys during 1992-2005.

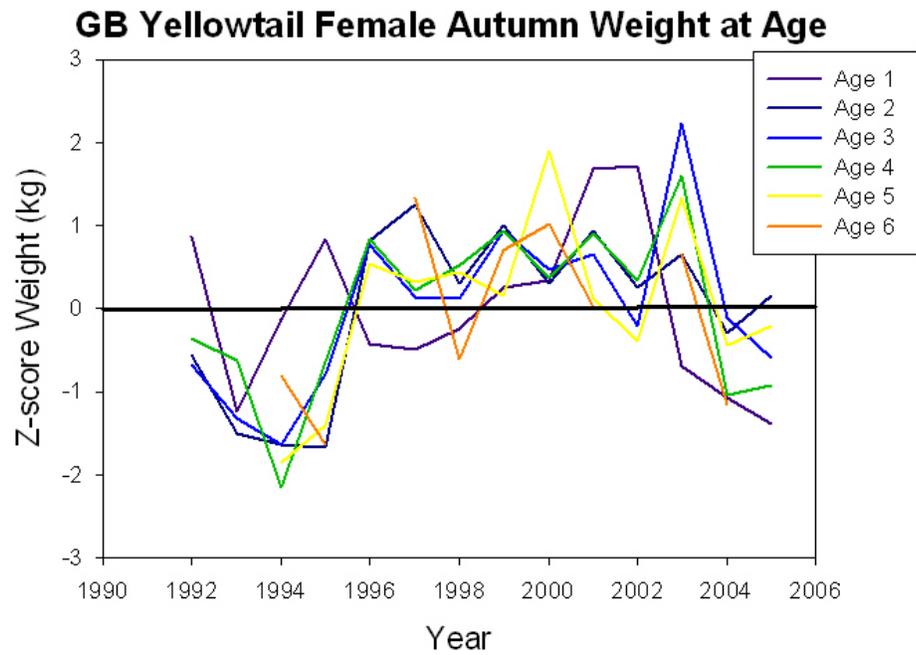
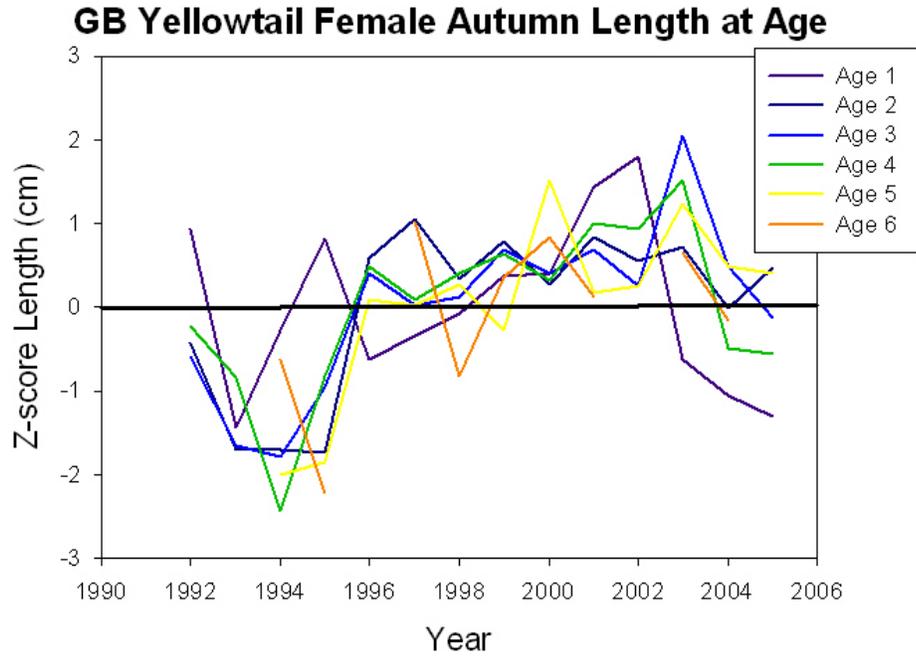
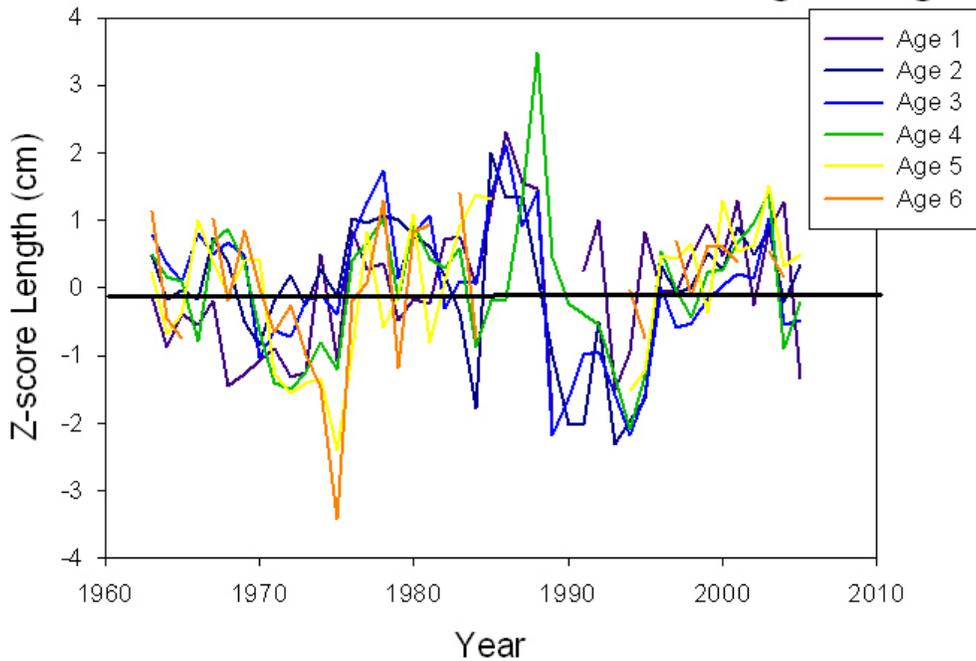


Figure 6.1.C1. Georges Bank yellowtail flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for females from autumn bottom trawl research surveys during 1992-2005.

GB Yellowtail Combined Sex Autumn Length at Age



GB Yellowtail Combined Sex Autumn Weight at Age

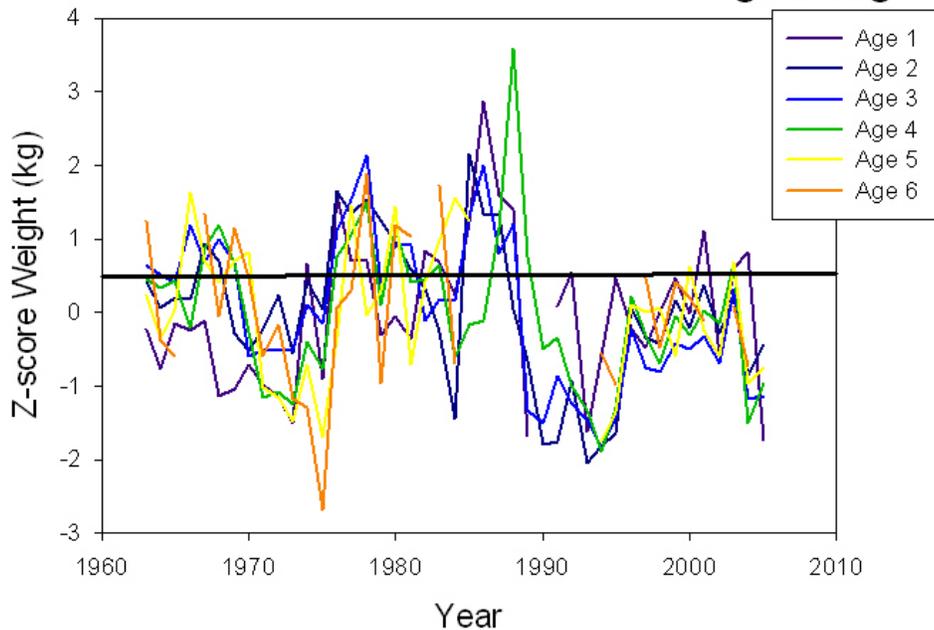


Figure 6.1.C1. Georges Bank yellowtail flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males and females combined from autumn bottom trawl research surveys during 1992-2005.

Georges Bank Yellowtail (Combined Sex) Fall 1963-1991

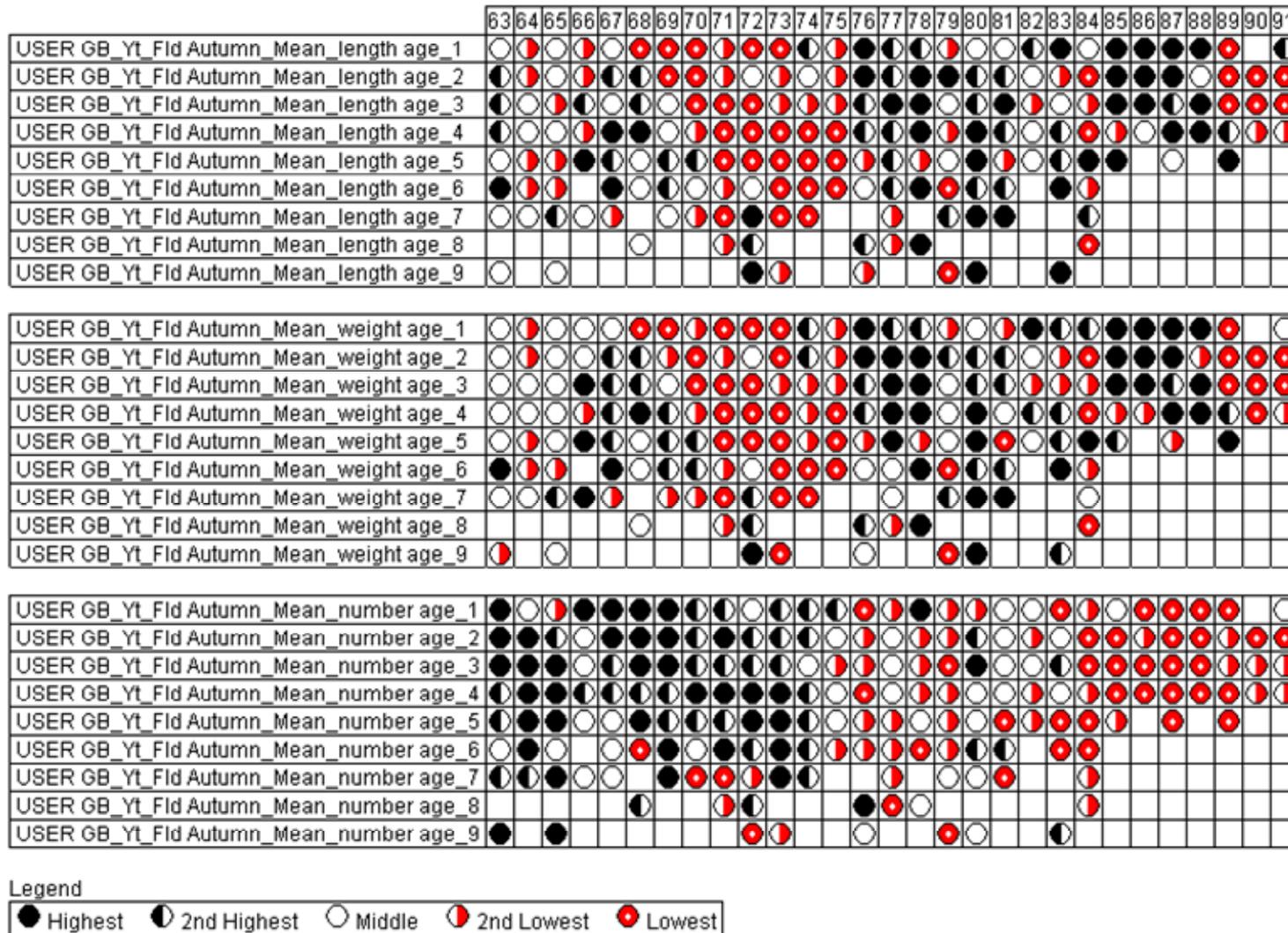


Figure 6.1.C2 cont. Quintiles of stratified mean length, weight and number per tow of Georges Bank yellowtail flounder during autumn bottom trawl research surveys during 1963-1991.

Georges Bank Yellowtail (Combined Sex) Fall 1992-2005

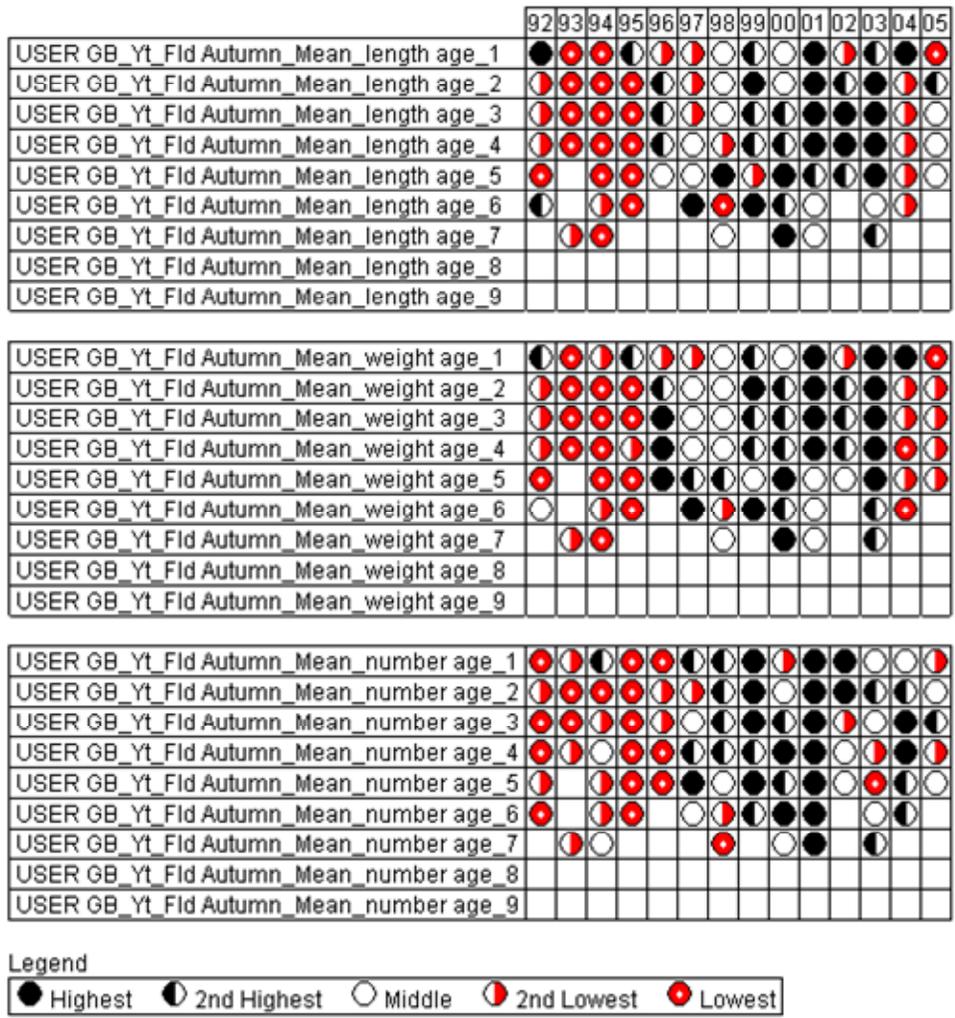
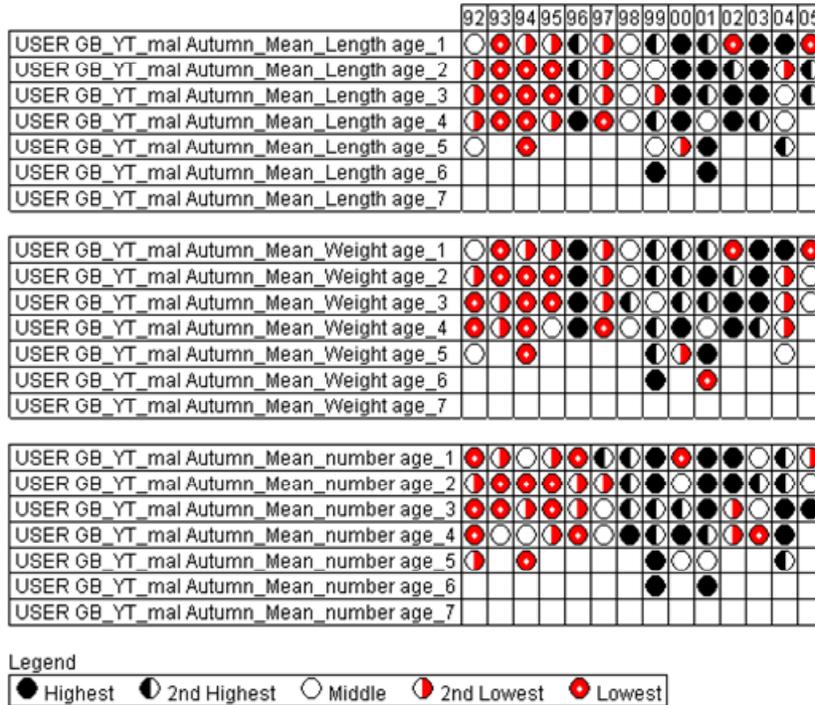


Figure 6.1.C2 cont. Quintiles of stratified mean length, weight and number per tow of Georges Bank yellowtail flounder during autumn bottom trawl research surveys during 1992-2005.

Georges Bank Yellowtail (Males) Fall 1992-2005



Georges Bank Yellowtail (Females) Fall 1992-2005

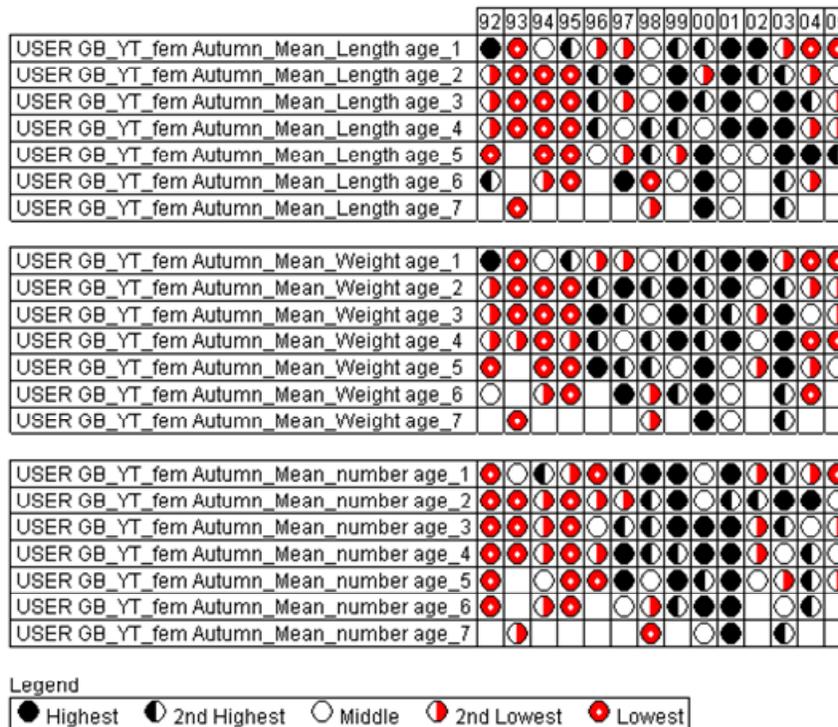


Figure 6.1.C2 cont. Quintiles of stratified mean length, weight and number per tow of Georges Bank yellowtail flounder during autumn bottom trawl research surveys during 1992-2005.

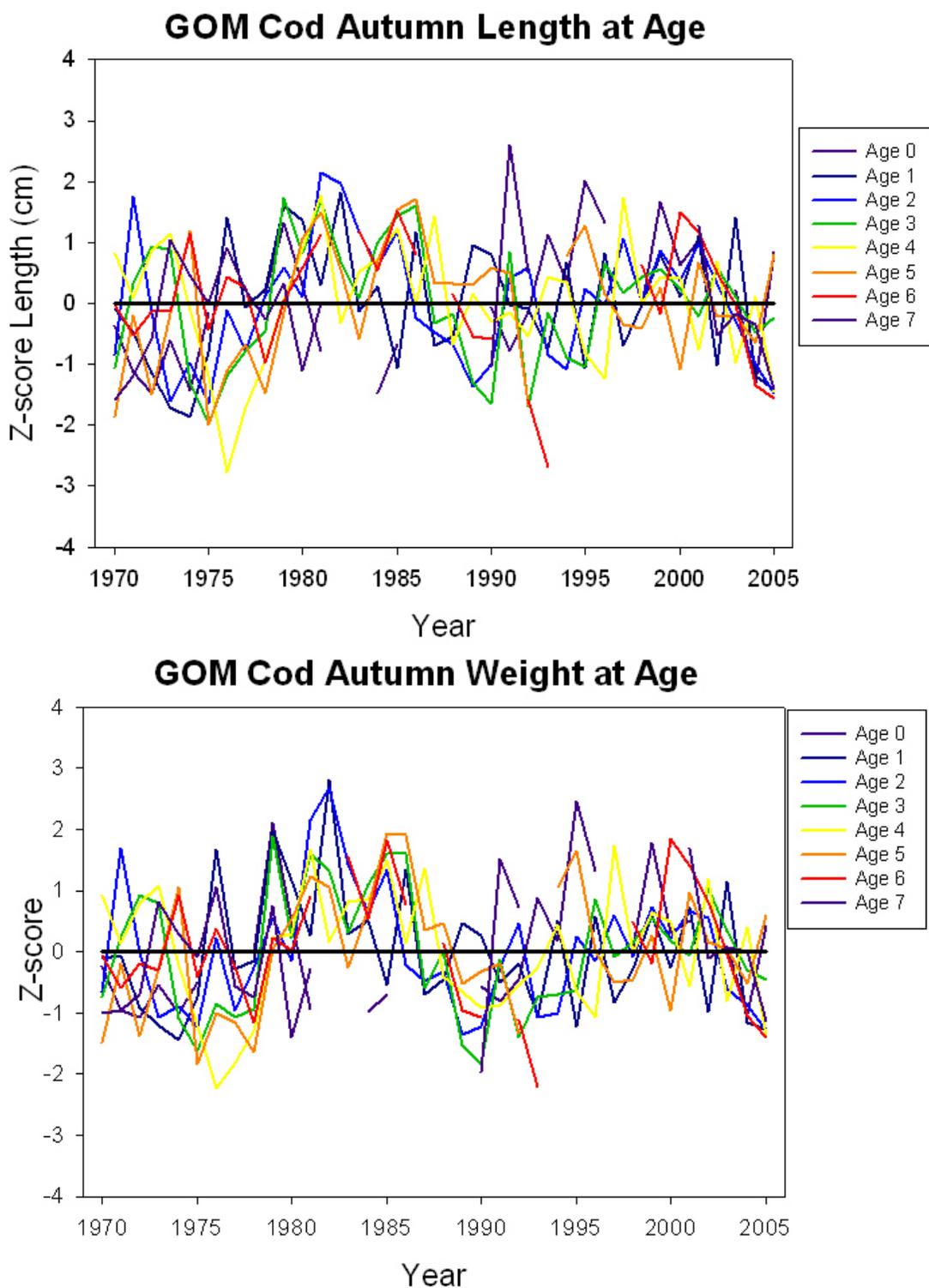


Figure 6.1.F1. Gulf of Maine cod Z-scores of stratified mean length (upper panel) and weight (lower panel) at age from autumn bottom trawl research surveys during 1970-2005.

Gulf of Maine Cod Fall 1970-2005 Ages 0-7

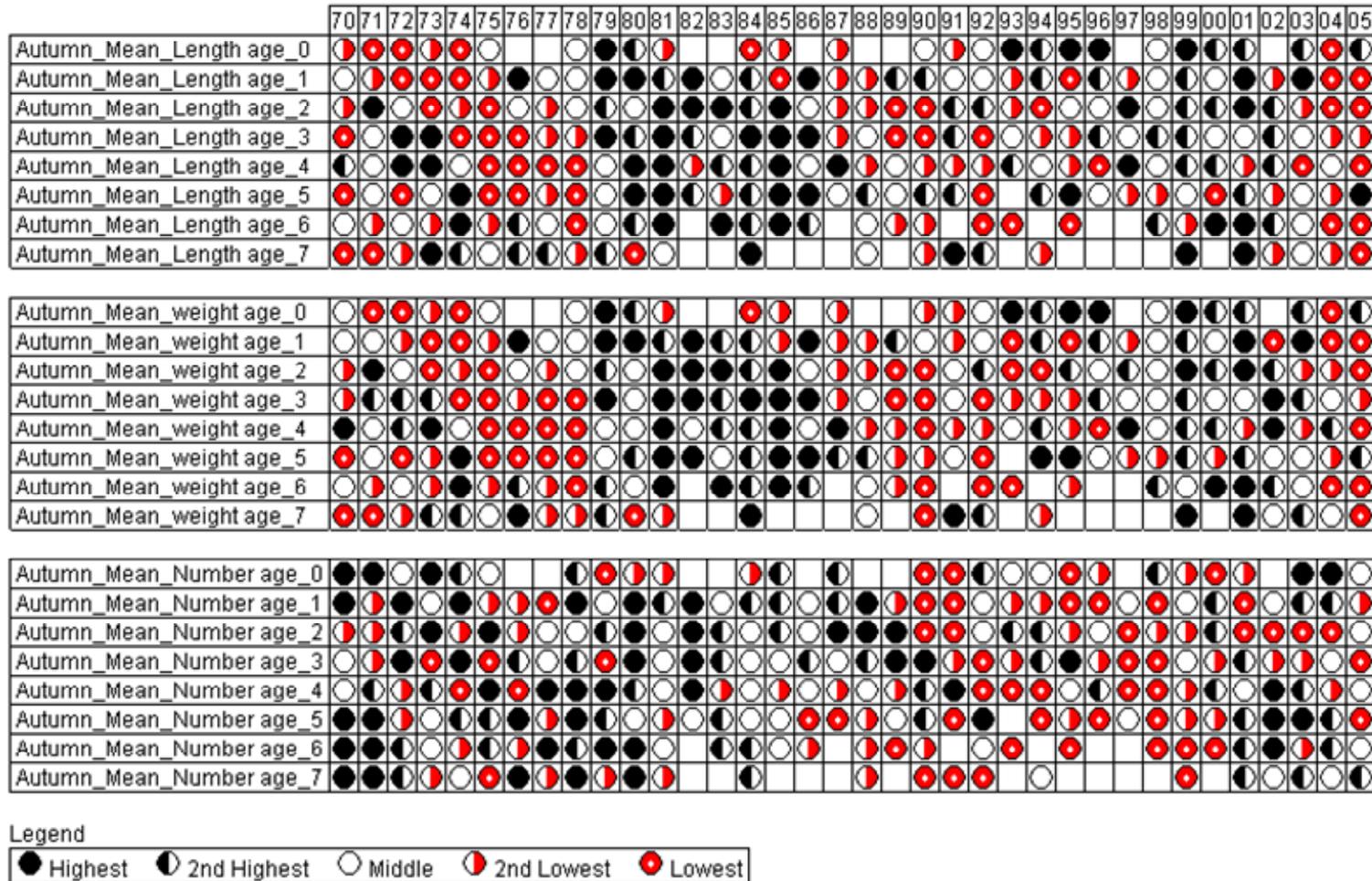


Figure 6.1.F2 cont. Quintiles of stratified mean length, weight and number per tow of Gulf of Maine cod during autumn bottom trawl research surveys during 1970-2005

Gulf of Maine Cod Fall 1992-2005 Ages 0-7

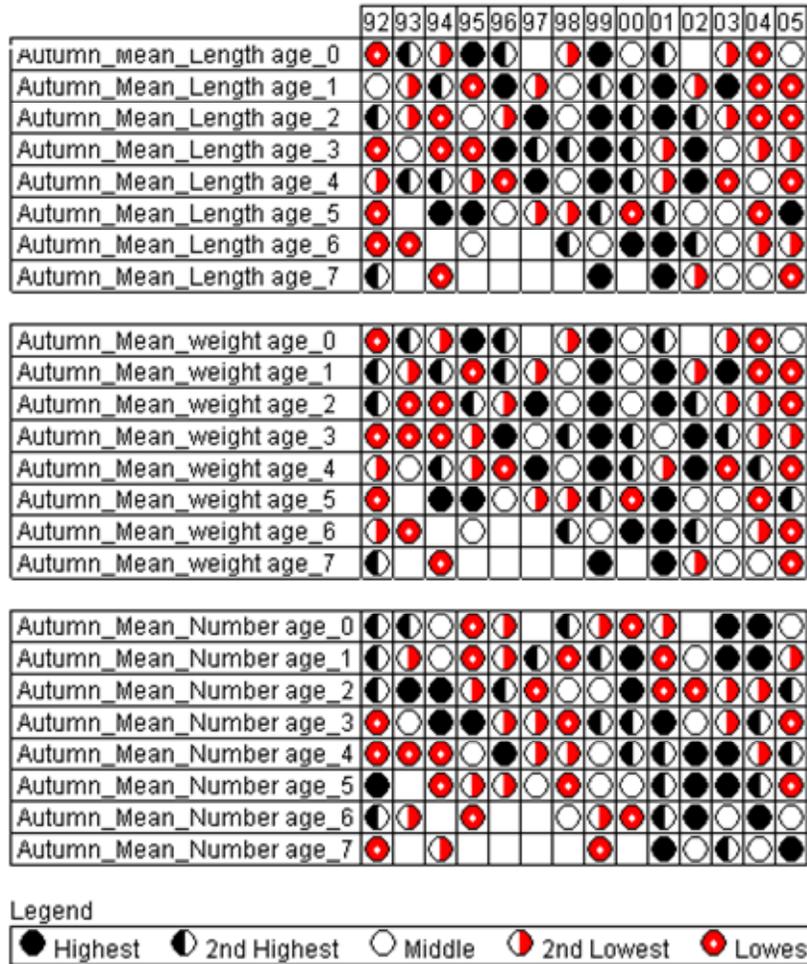


Figure 6.1.F2 cont. Quintiles of stratified mean length, weight and number per tow of Gulf of Maine cod during autumn bottom trawl research surveys during 1992-2005

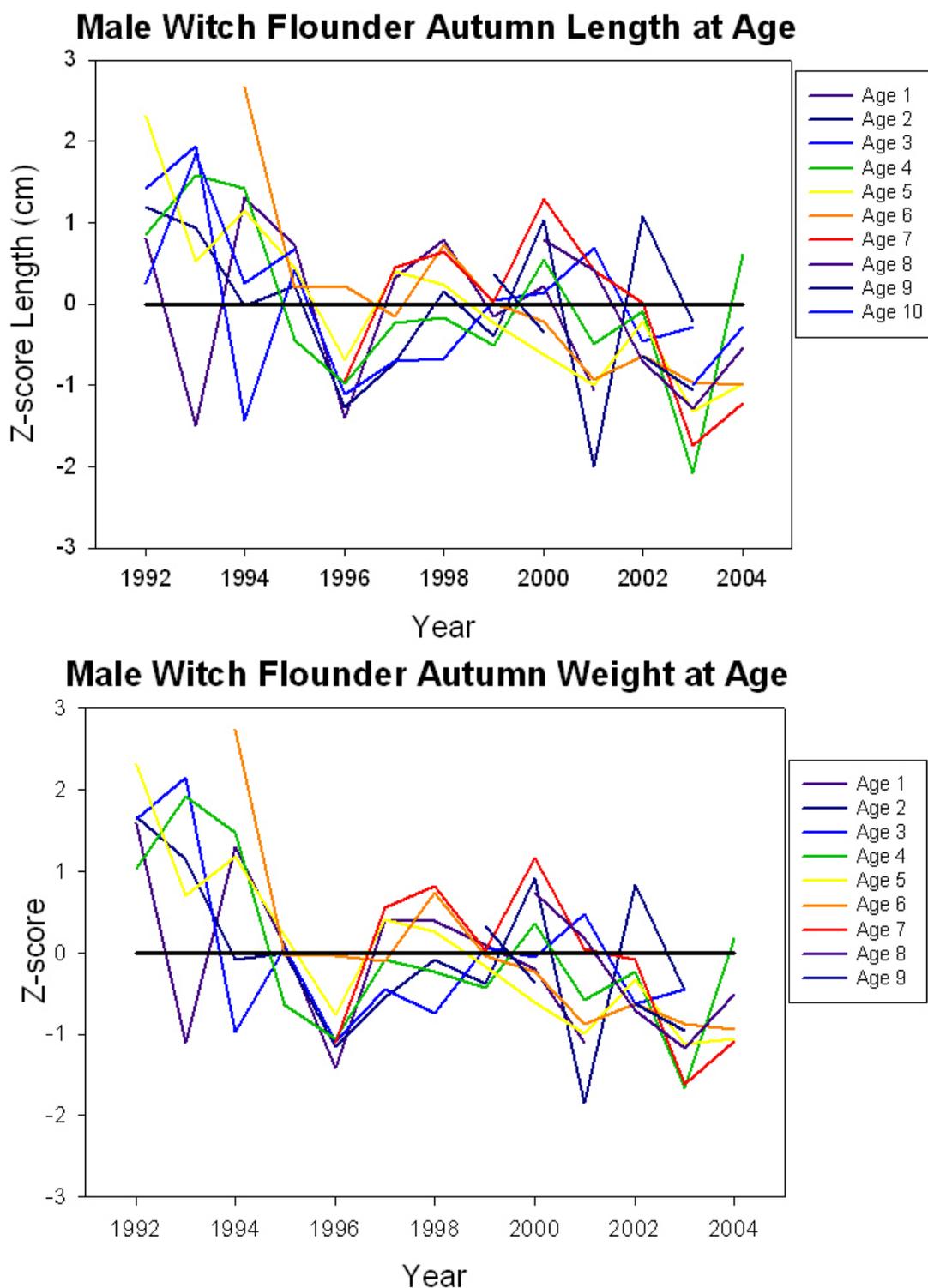


Figure 6.1.G1. Witch flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males from autumn bottom trawl research surveys during 1992-2004.

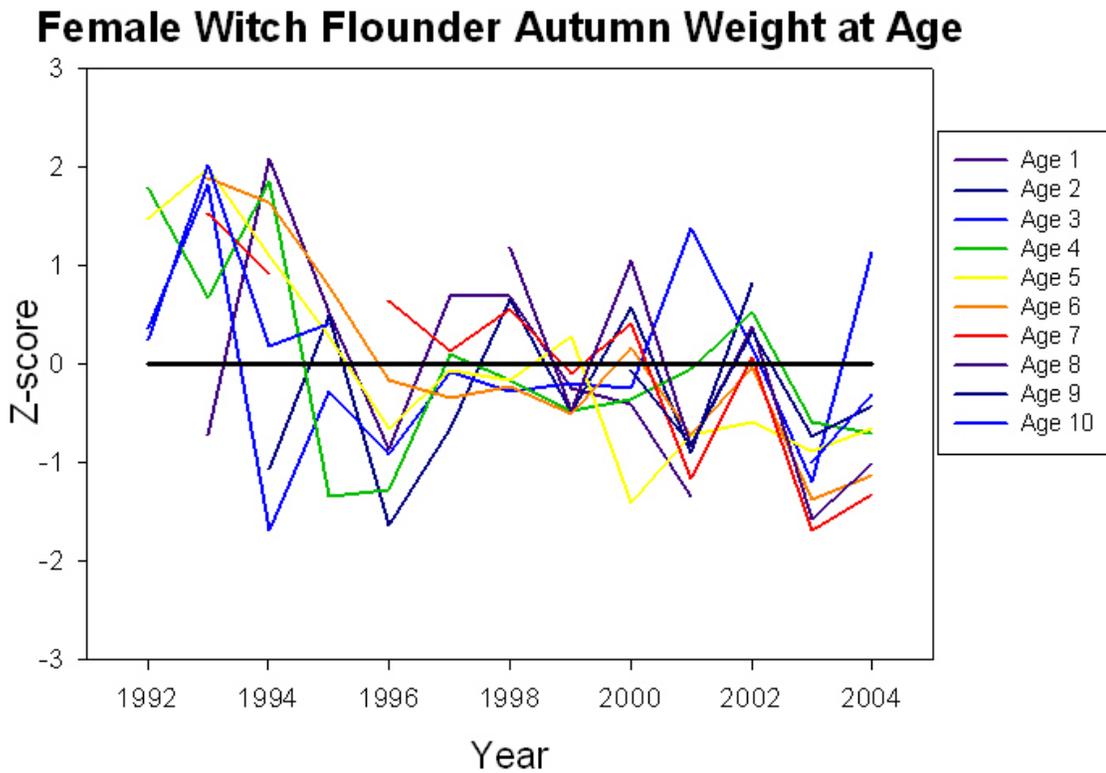
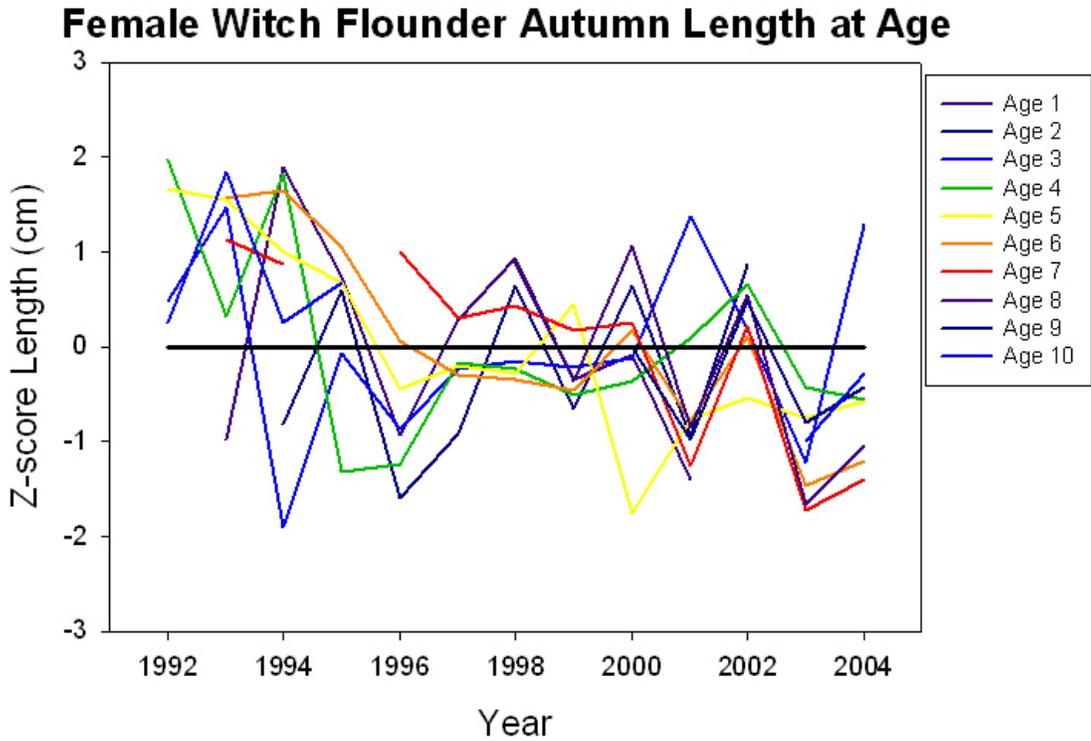


Figure 6.1.G1. Witch flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for females from autumn bottom trawl research surveys during 1992-2004.

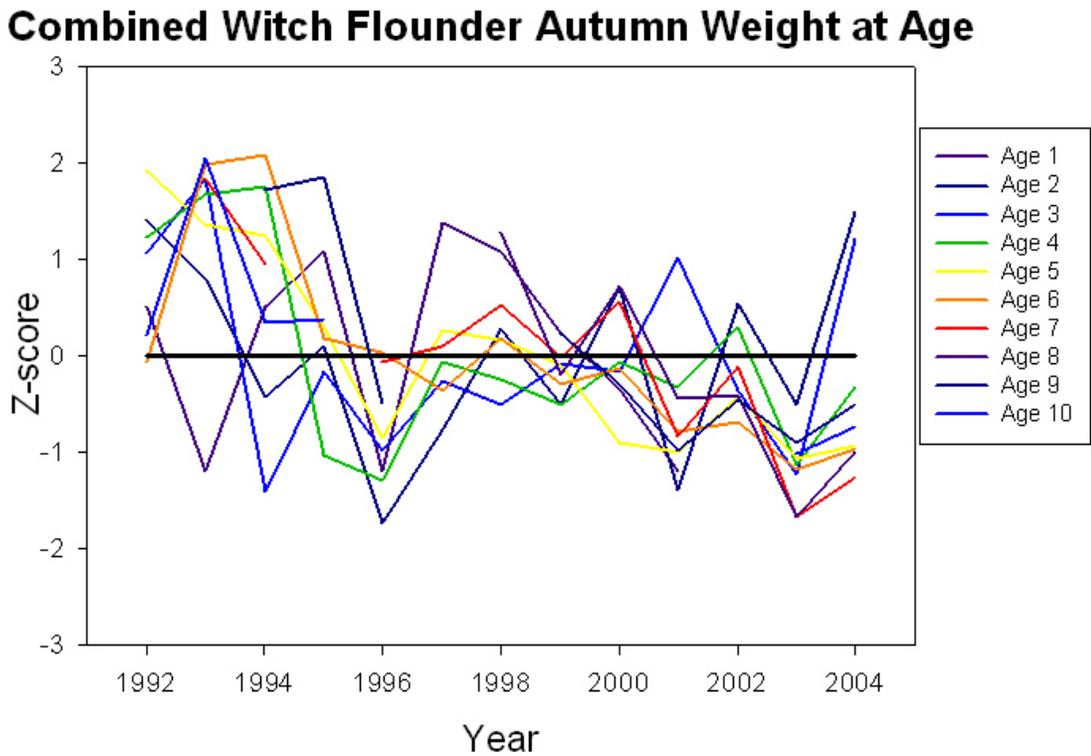
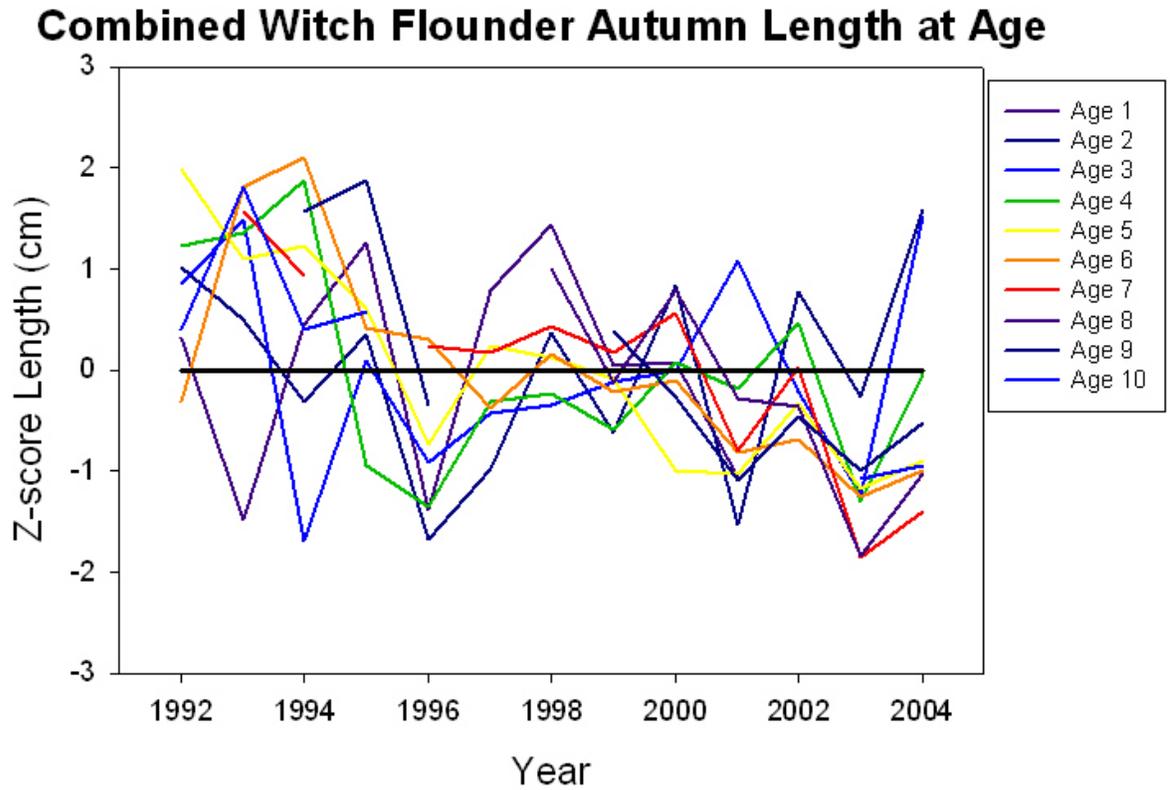


Figure 6.1.G1. Witch flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males and females combined from autumn bottom trawl research surveys during 1992-2004.

Witch Flounder Combined Sex Fall 1982-2004

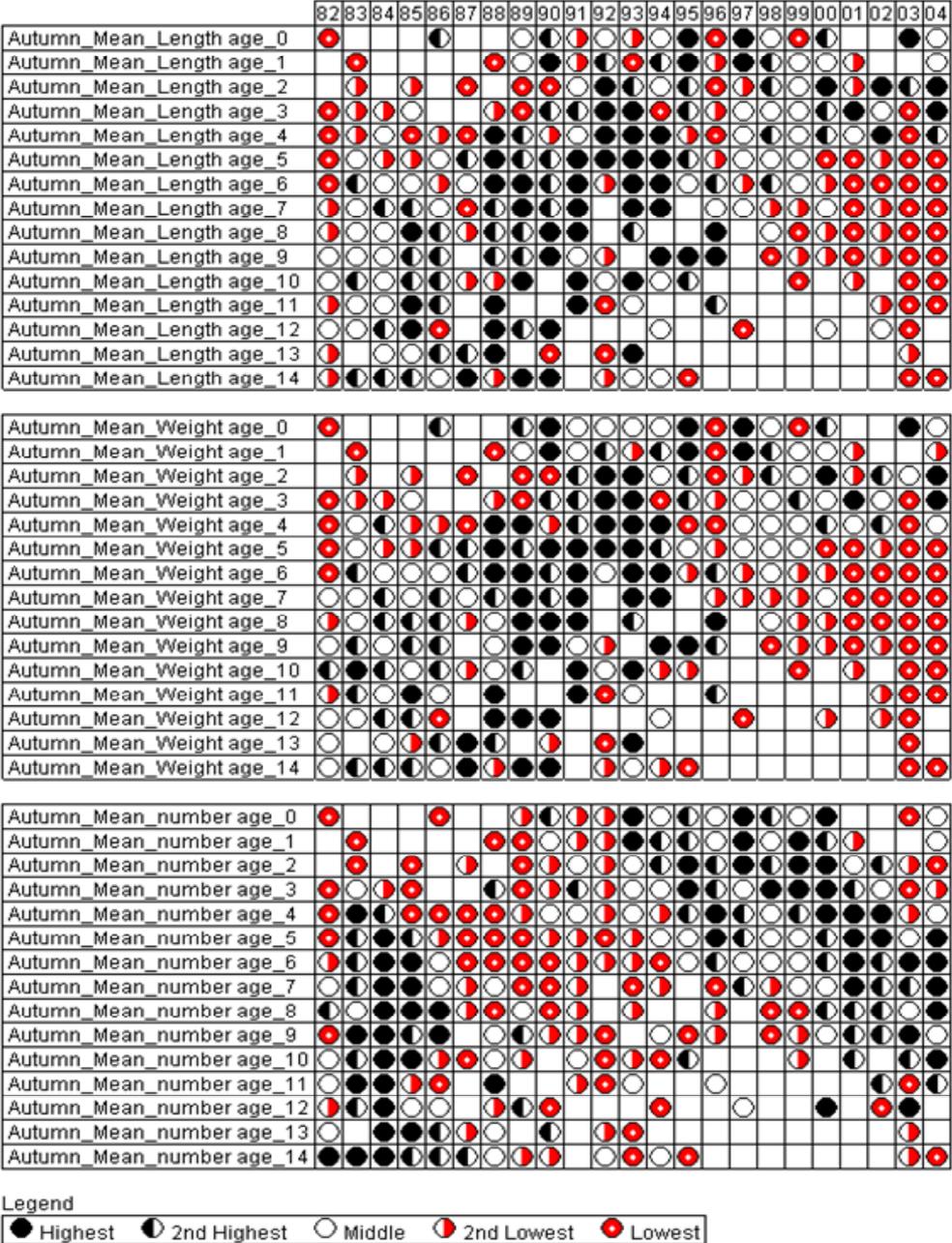


Figure 6.1.G2. Quintiles of stratified mean length, weight and number per tow of Witch flounder during autumn bottom trawl research surveys during 1982-2004.

Witch Flounder Males Ages 1-9 Fall 1992-2004

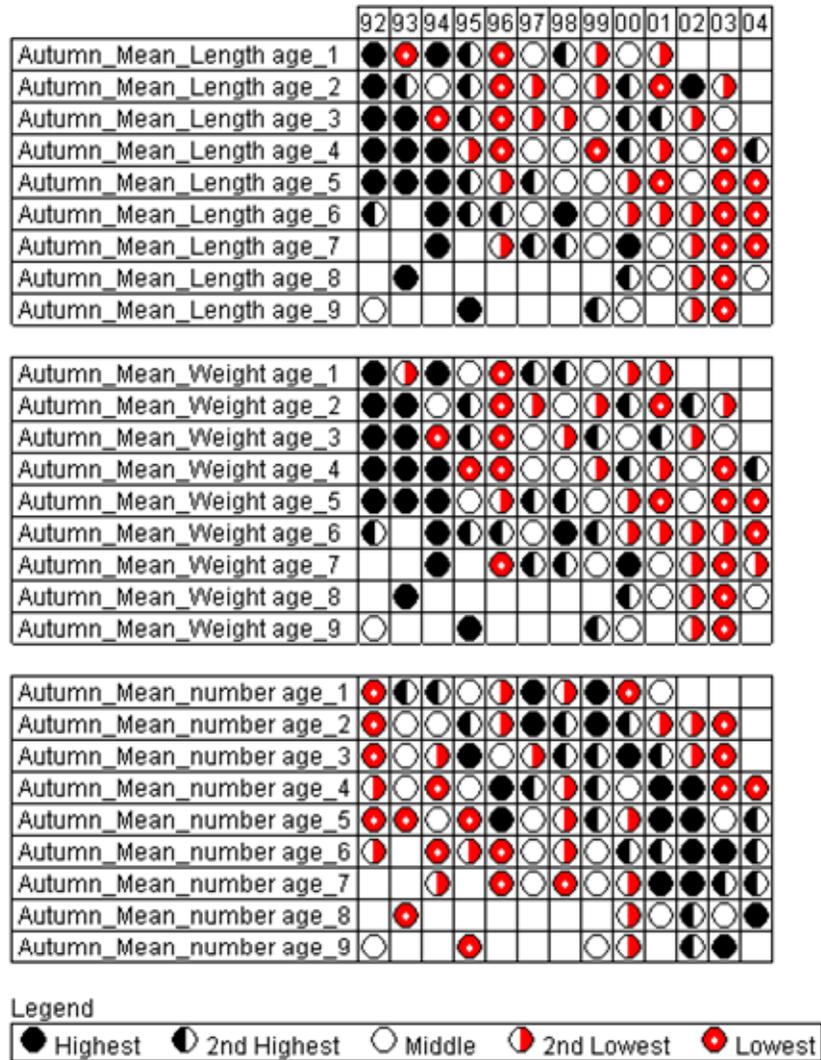


Figure 6.1.G2 cont. Quintiles of stratified mean length, weight and number per tow of Witch flounder during autumn bottom trawl research surveys during 1992-2004.

Witch Flounder Females Ages 1-10 Fall 1992-2004

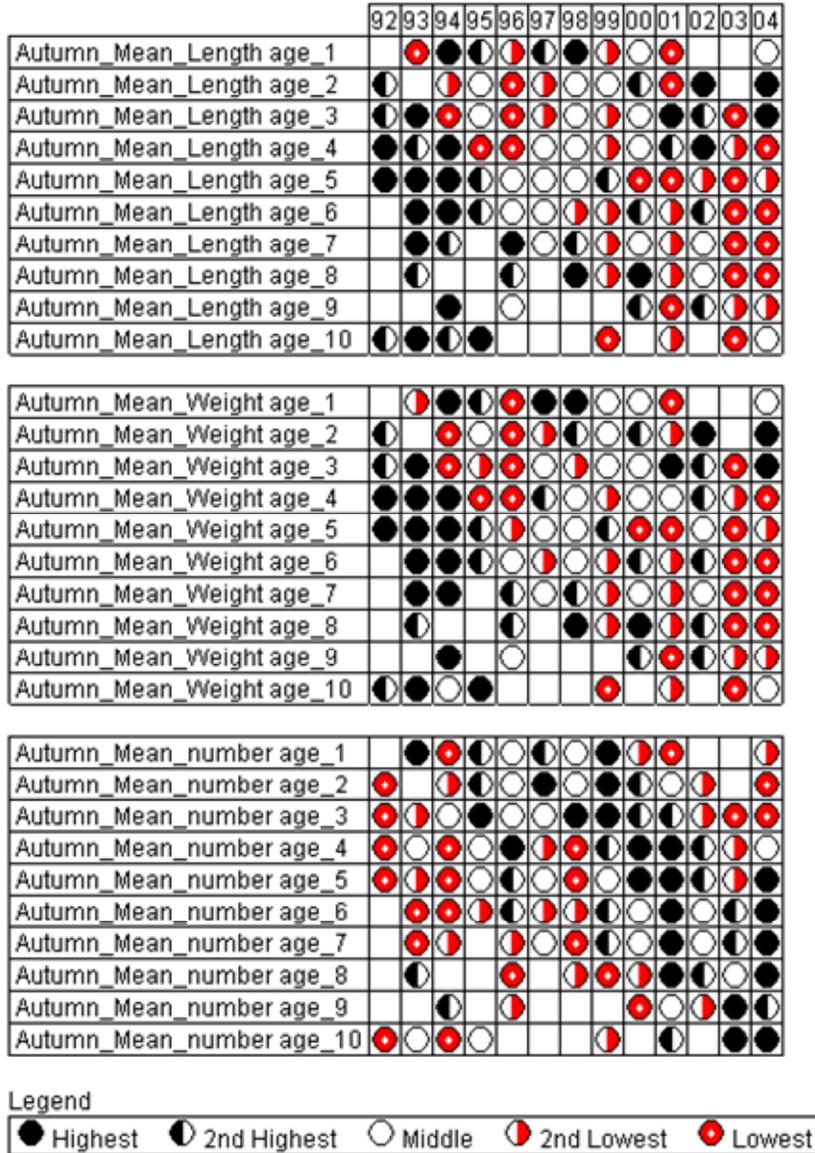


Figure 6.1.G2 cont. Quintiles of stratified mean length, weight and number per tow of Witch flounder during autumn bottom trawl research surveys during 1992-2004.

Witch Flounder Combined Sex Ages 1-10 Fall 1992-2004

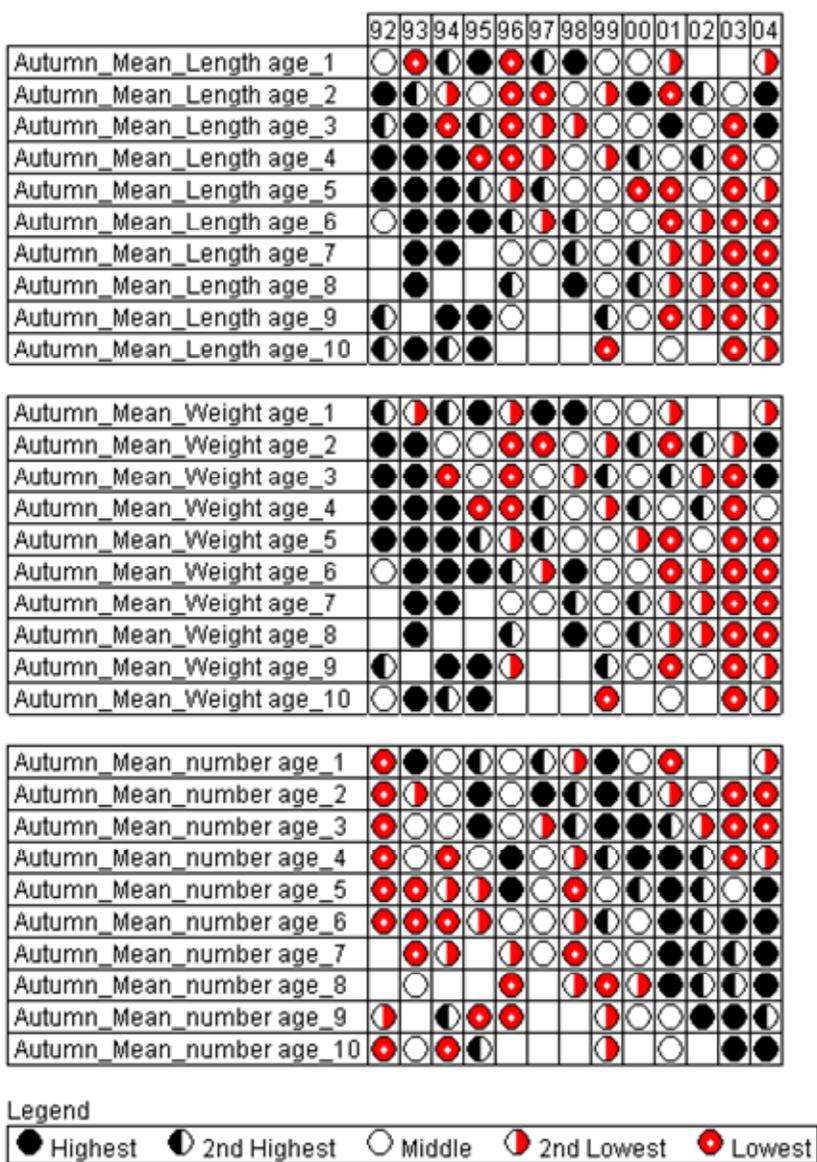


Figure 6.1.G2 cont. Quintiles of stratified mean length, weight and number per tow of Witch flounder during autumn bottom trawl research surveys during 1992-2004.

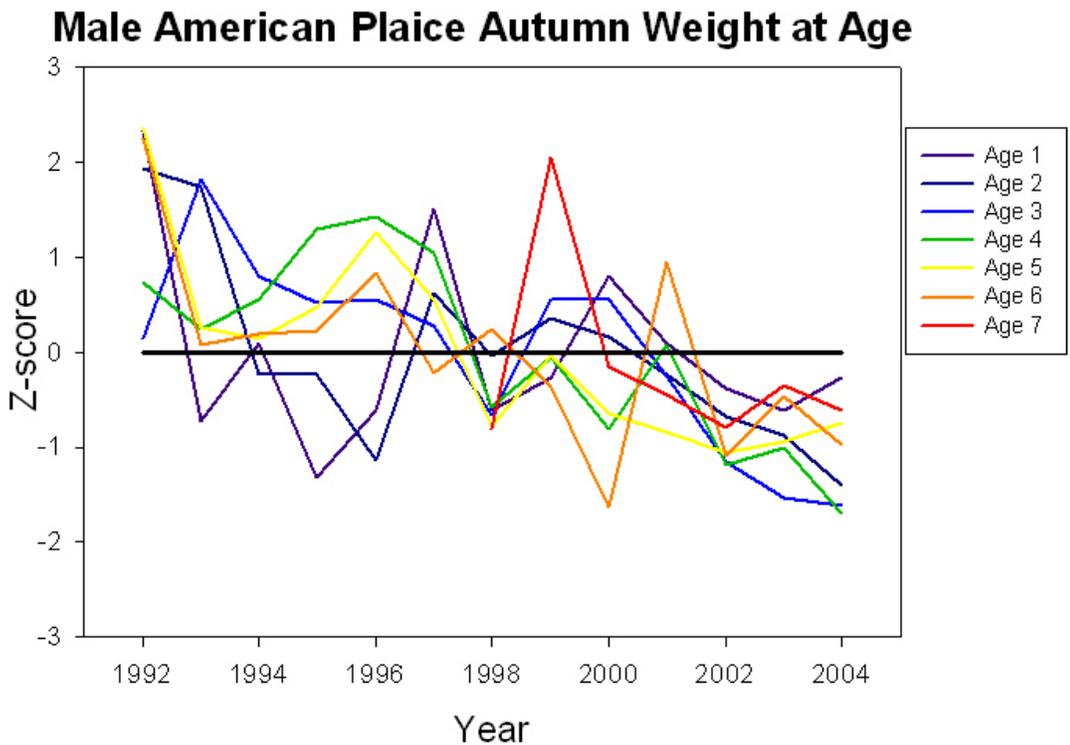
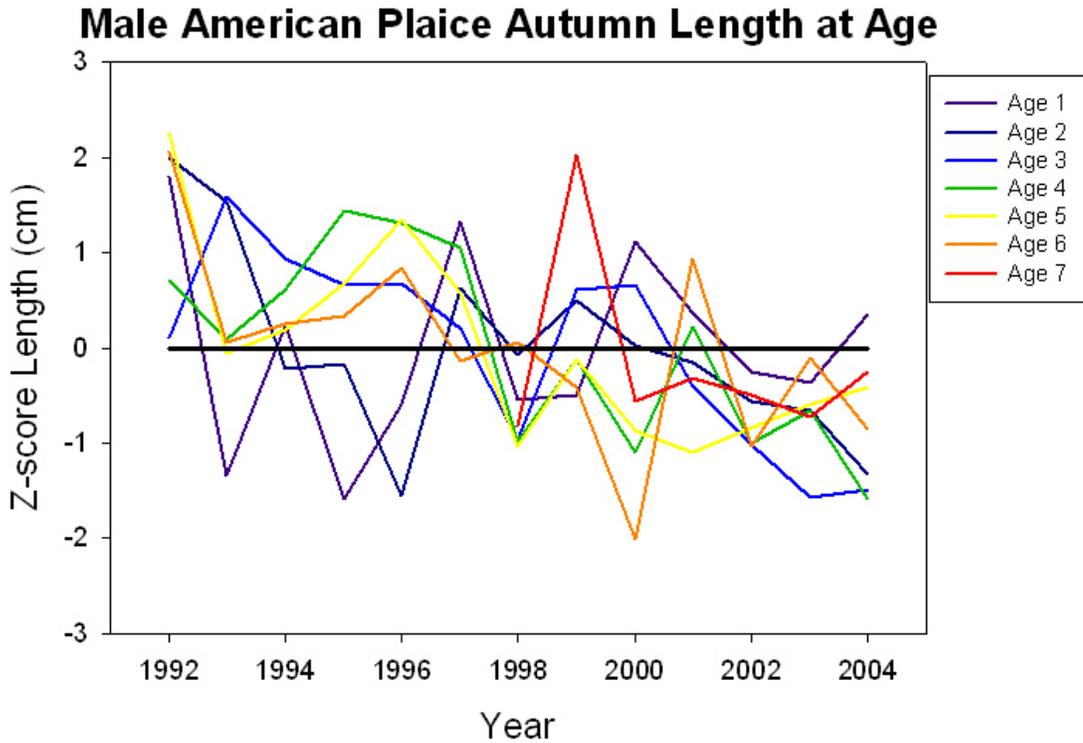


Figure 6.1.H1. American Plaice Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males from autumn bottom trawl research surveys during 1992-2004.

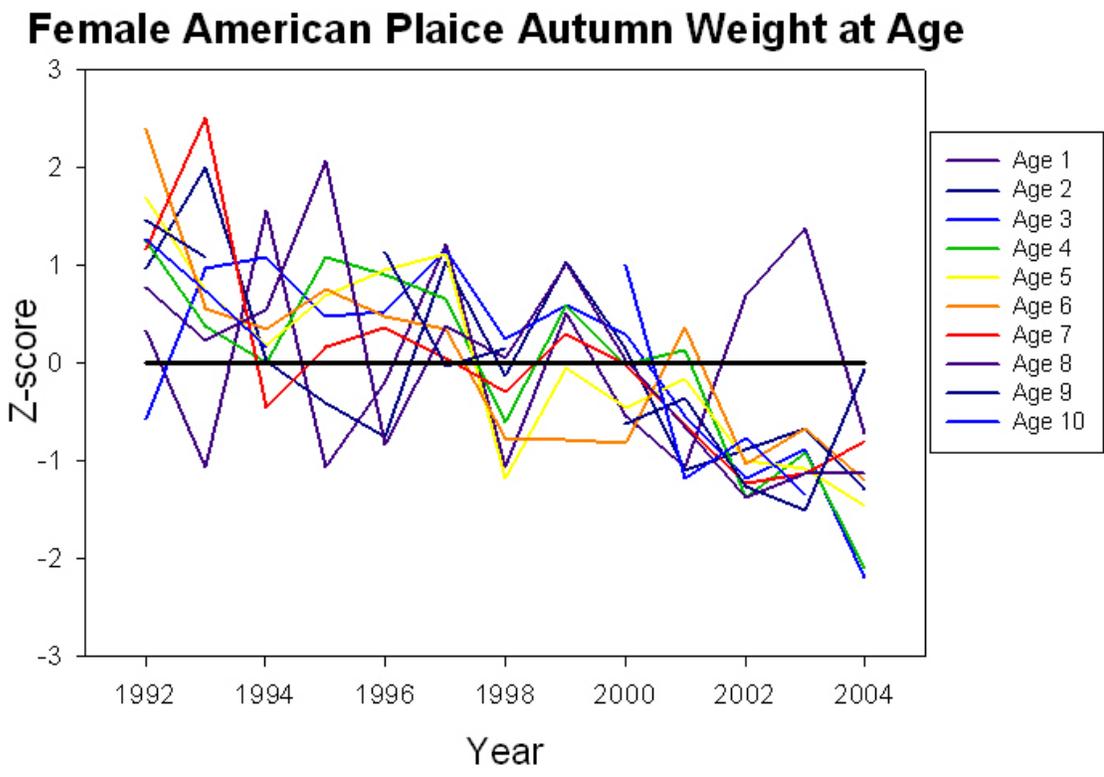
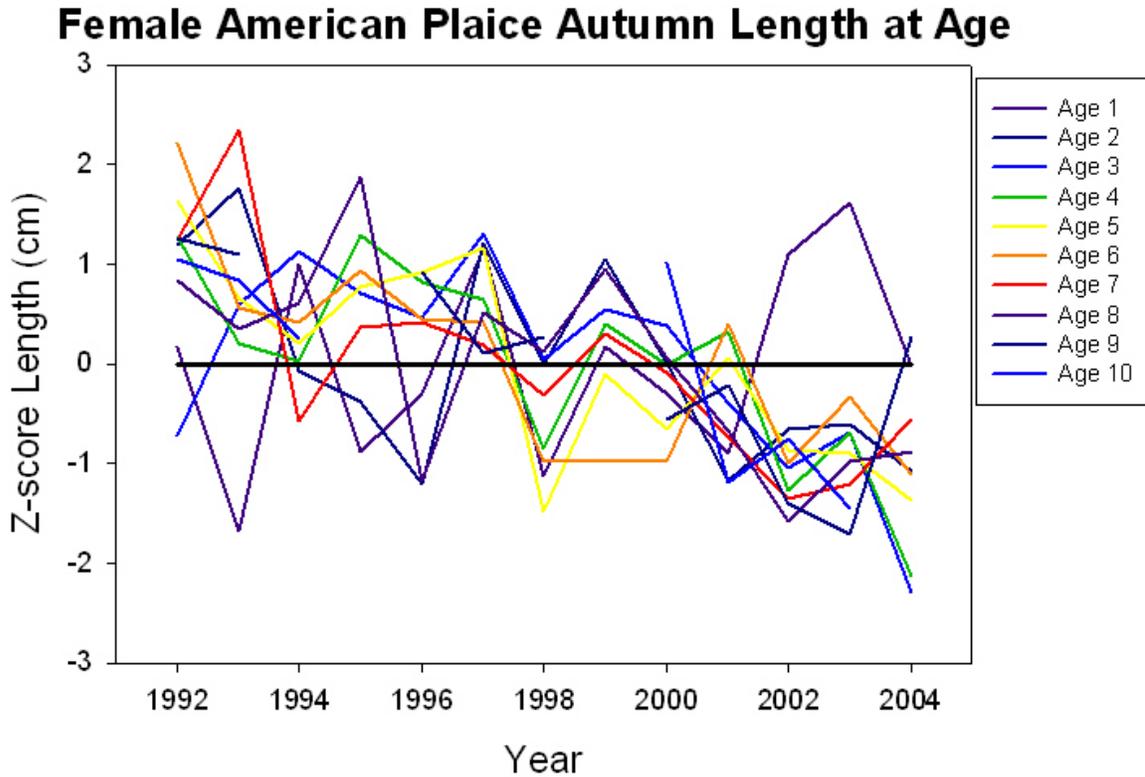


Figure 6.1.H1. American Plaice Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for females from autumn bottom trawl research surveys during 1992-2004.

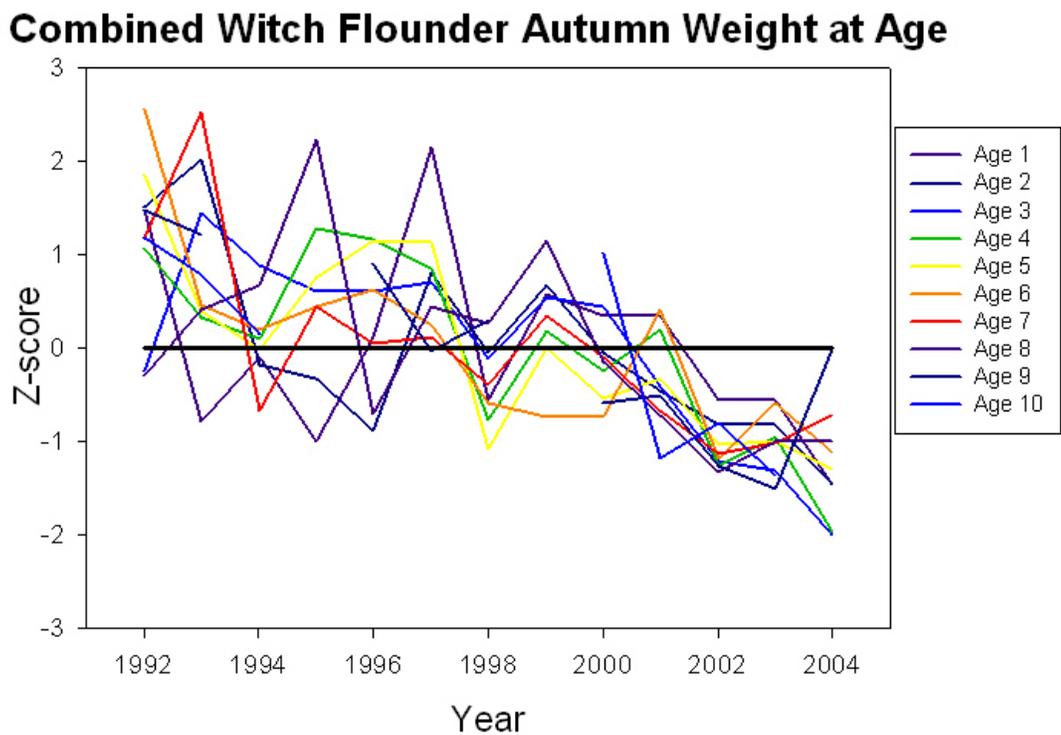
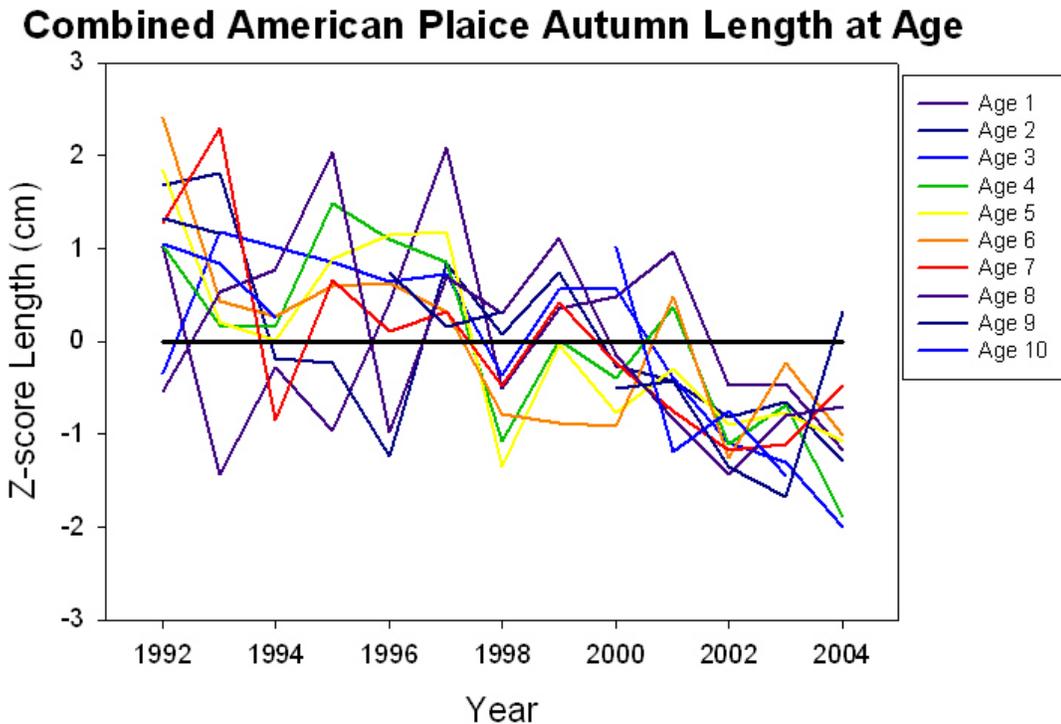


Figure 6.1.H1. American Plaice Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males and females combined from autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine American Plaice Fall Females 1992-2004

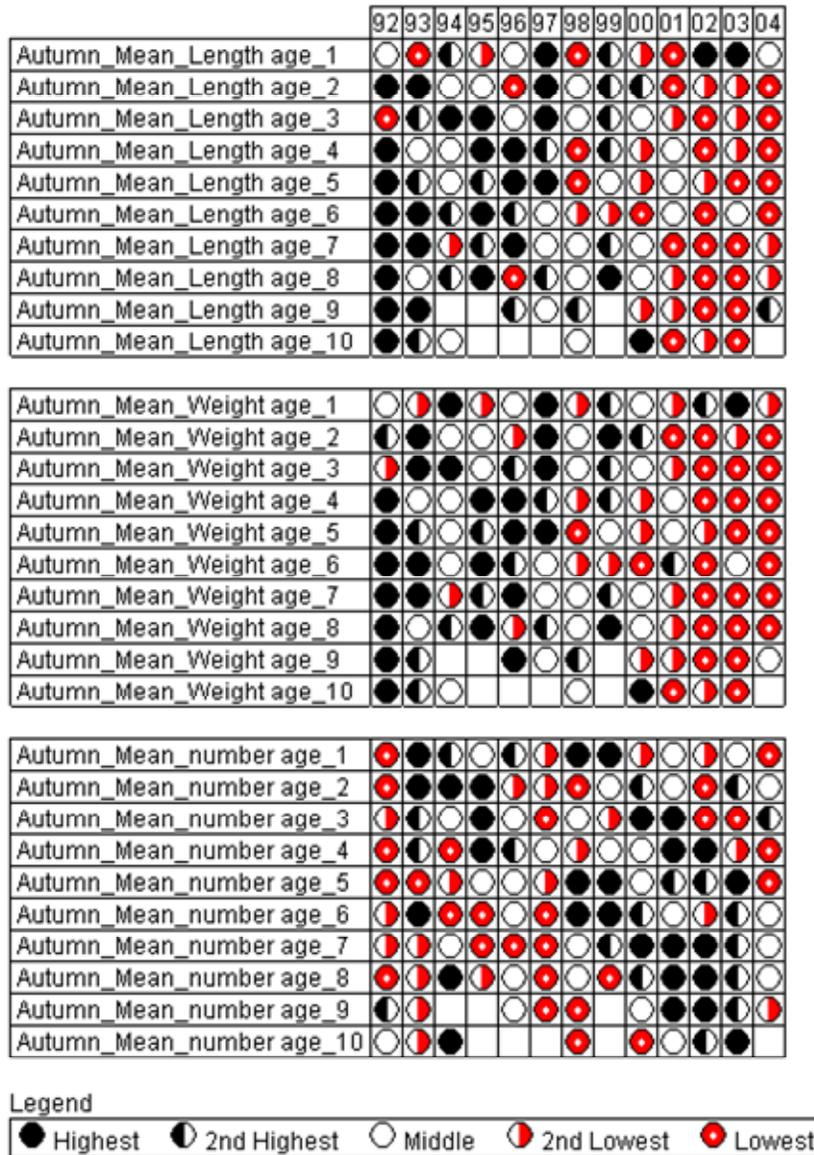


Figure 6.1.H2. Quintiles of stratified mean length, weight and number per tow of American plaice during autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine American Plaice Fall Males 1992-2004

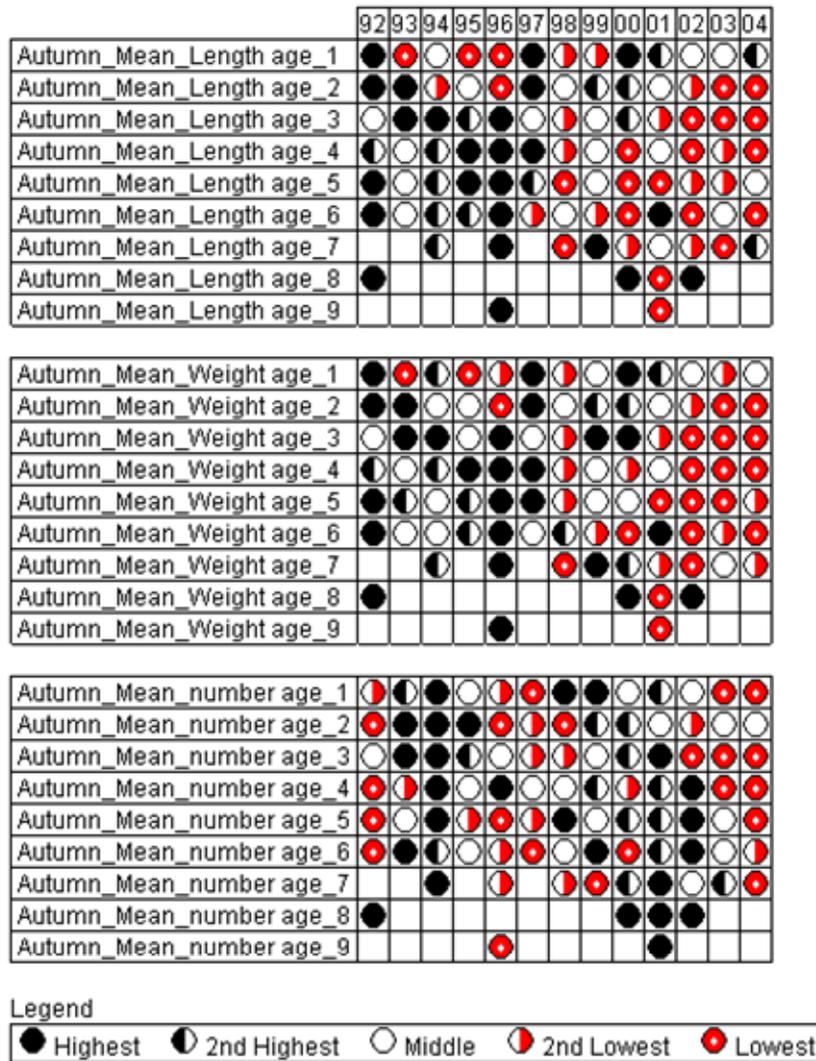


Figure 6.1.H2 cont. Quintiles of stratified mean length, weight and number per tow of American plaice during autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine American Plaice Fall Combined Sex 1992-2004

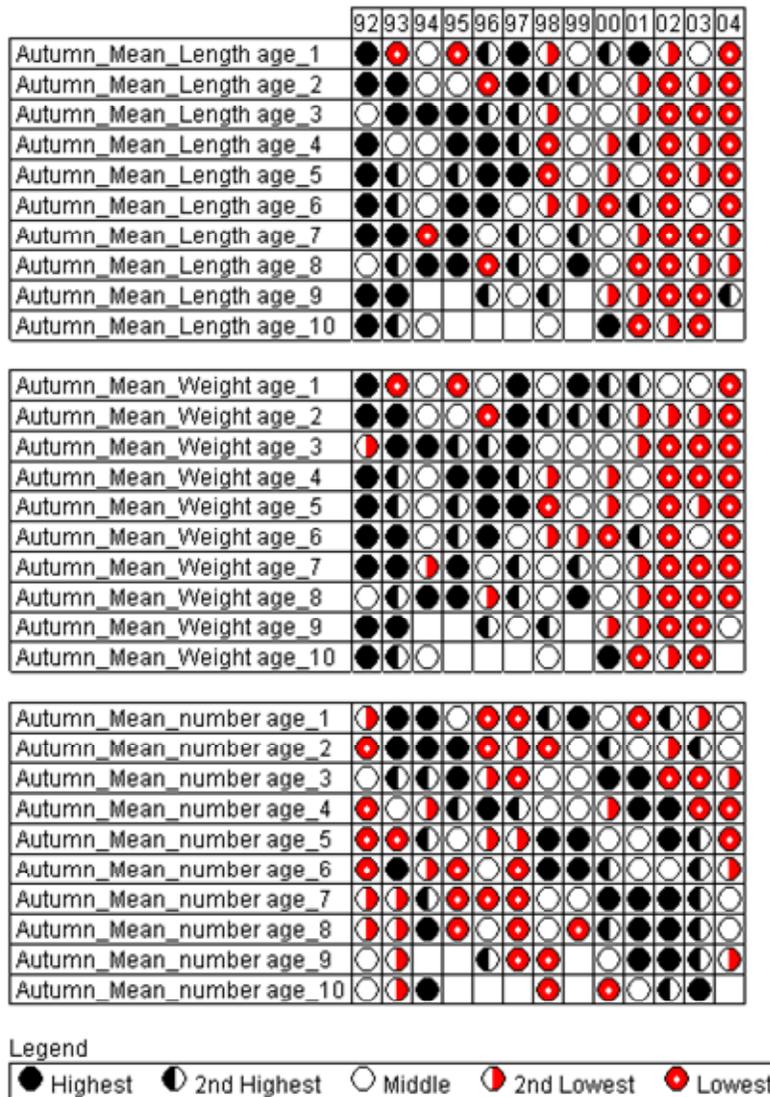


Figure 6.1.H2 cont. Quintiles of stratified mean length, weight and number per tow of American plaice during autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine American Plaice Fall Combined Sex Ages 1-10 1980-2004

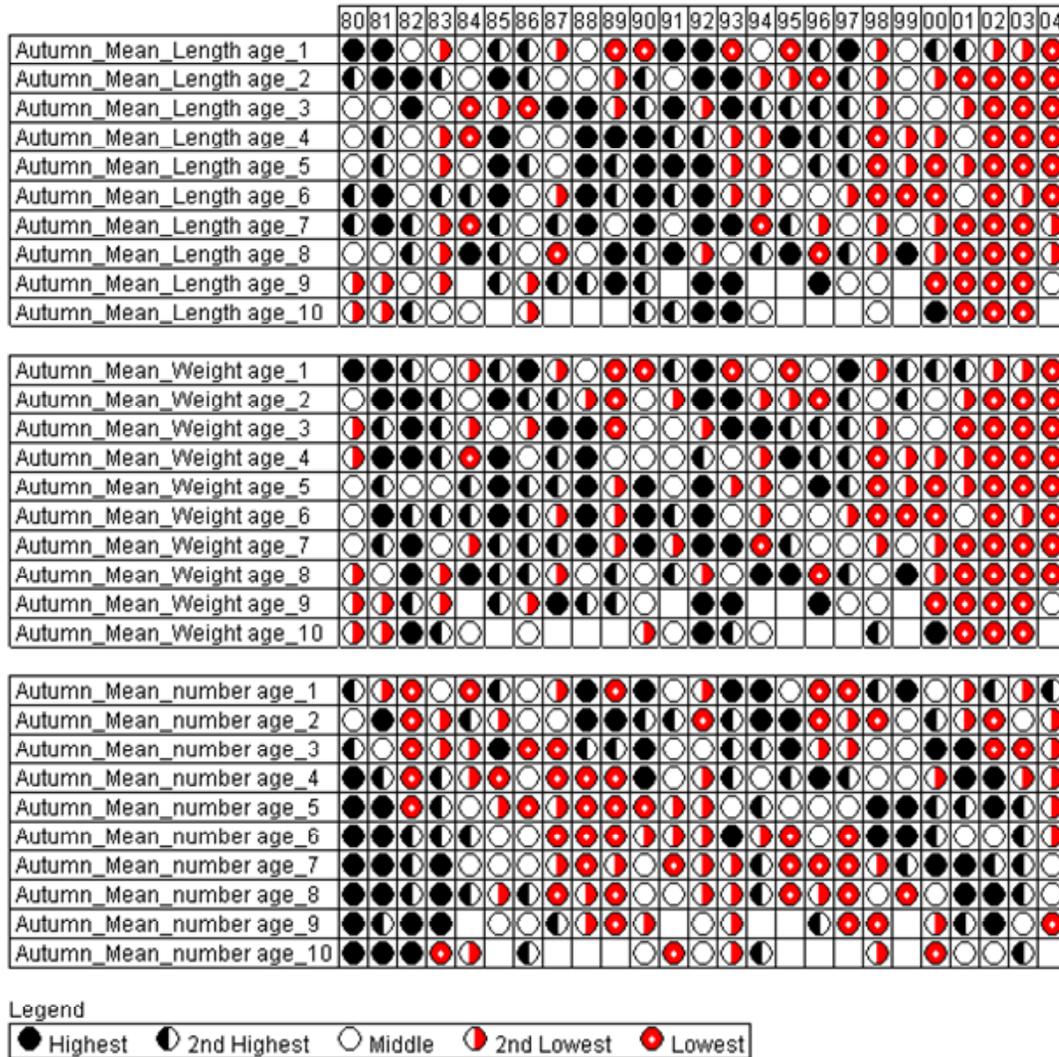
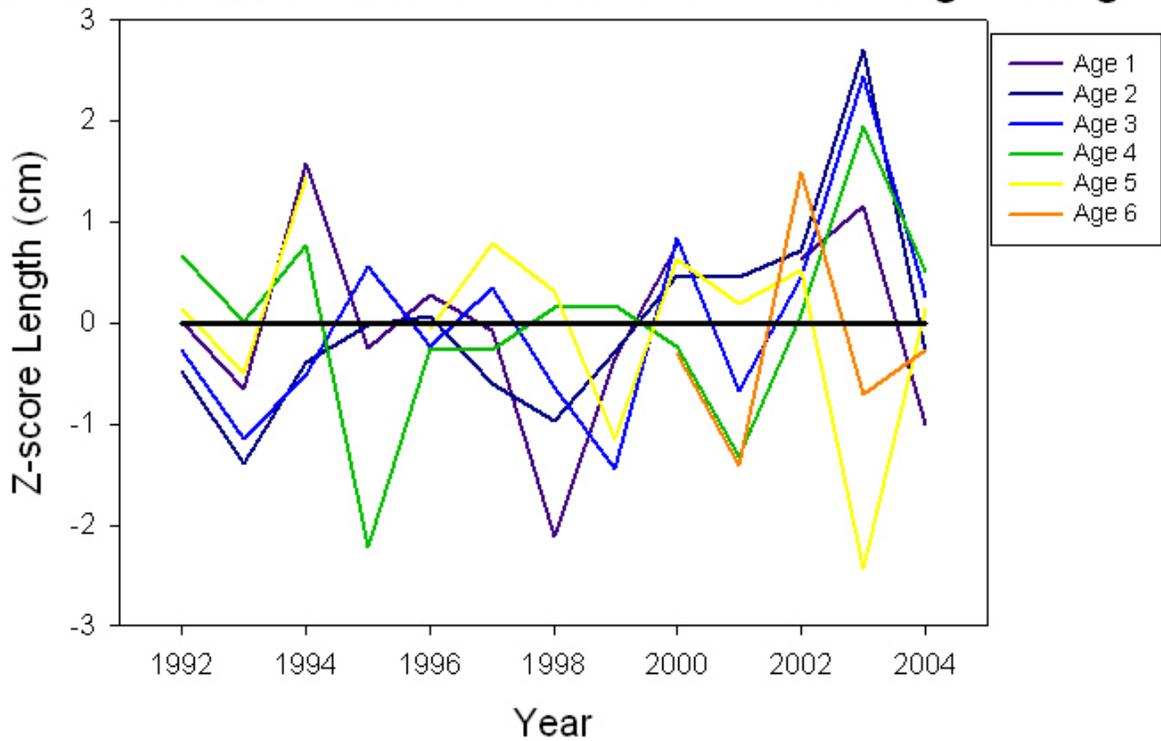


Figure 6.1.H2 cont. Quintiles of stratified mean length, weight and number per tow of American plaice during autumn bottom trawl research surveys during 1980-2004.

Male Gulf of Maine Winter Flounder Autumn Length at Age



Male Gulf of Maine Winter Flounder Autumn Weight at Age

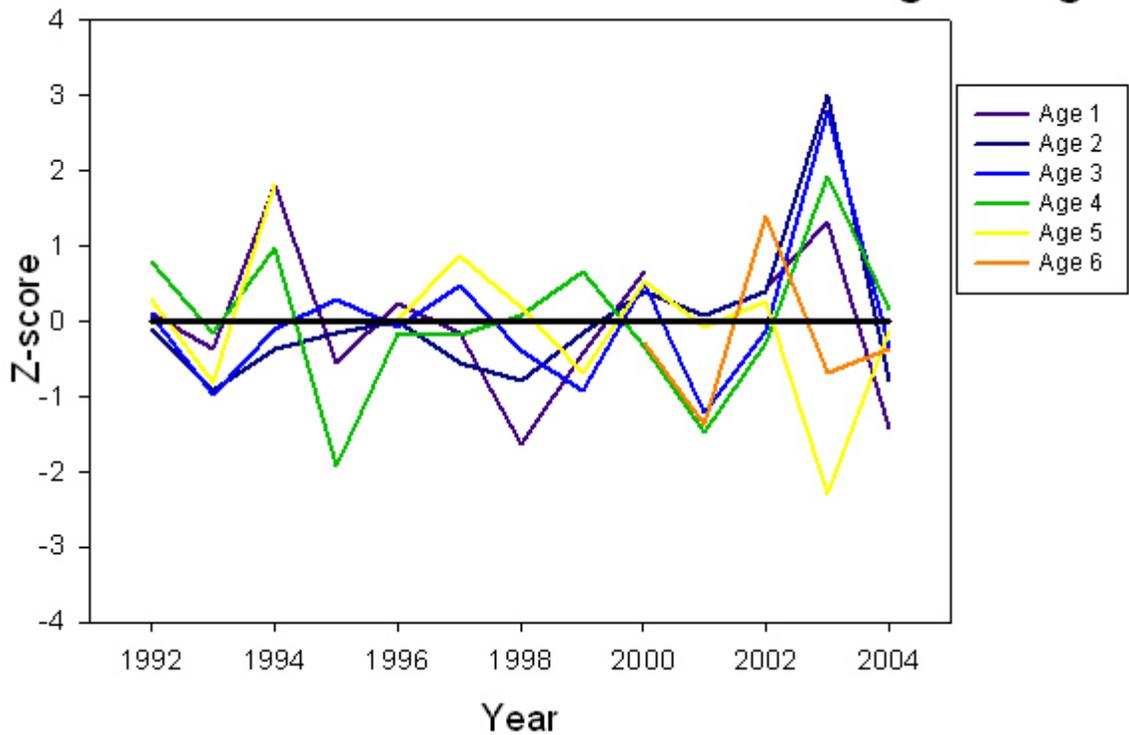
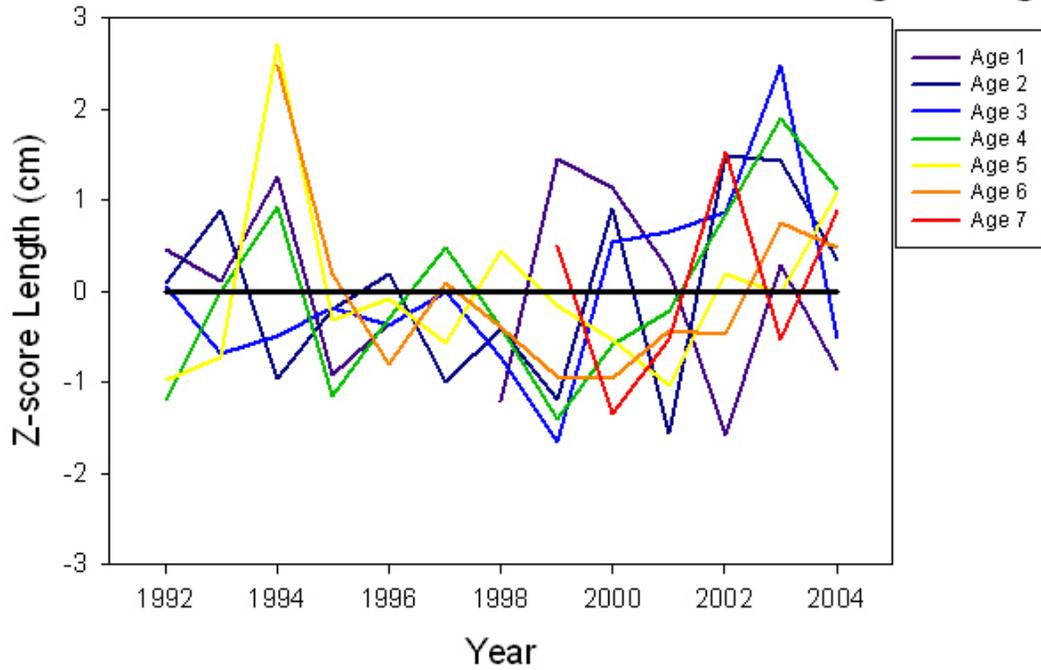


Figure 6.1.II. Gulf of Maine winter flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males from autumn bottom trawl research surveys during 1992-2004.

Female Gulf of Maine Winter Flounder Autumn Length at Age



Female Gulf of Maine Winter Flounder Autumn Weight at Age

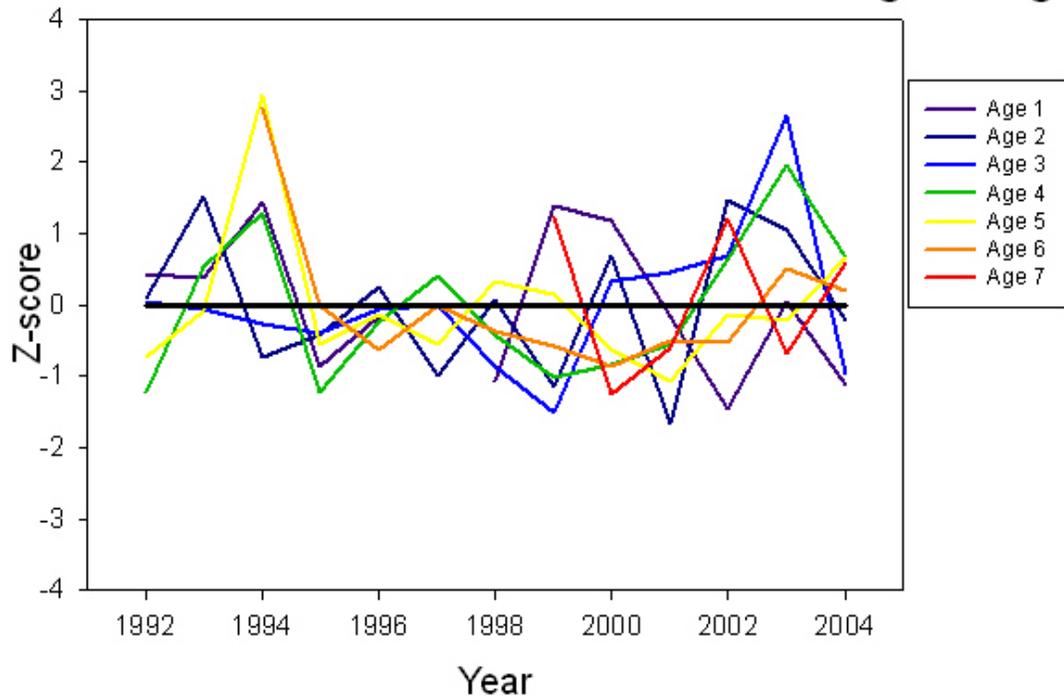
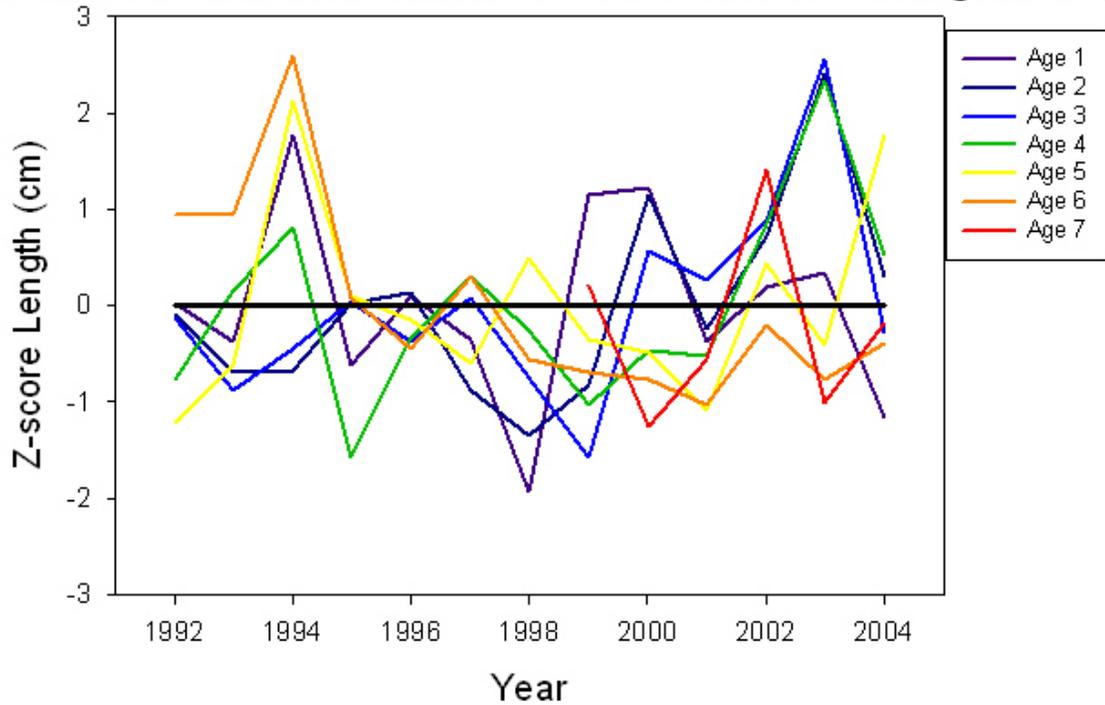


Figure 6.1.II. Gulf of Maine winter flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for females from autumn bottom trawl research surveys during 1992-2004.

Combined Gulf of Maine Winter Flounder Autumn Length at Age



Combined Gulf of Maine Winter Flounder Autumn Weight at Age

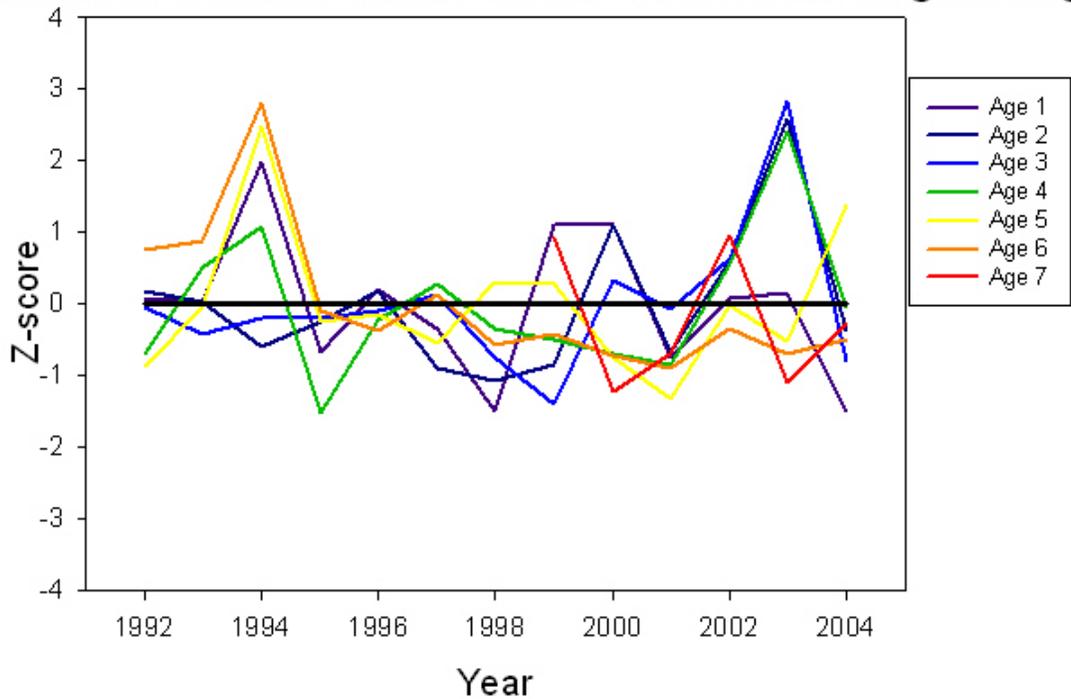


Figure 6.1.II. Gulf of Maine winter flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males and females combined from autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine Winter Flounder Fall Females 1992-2004

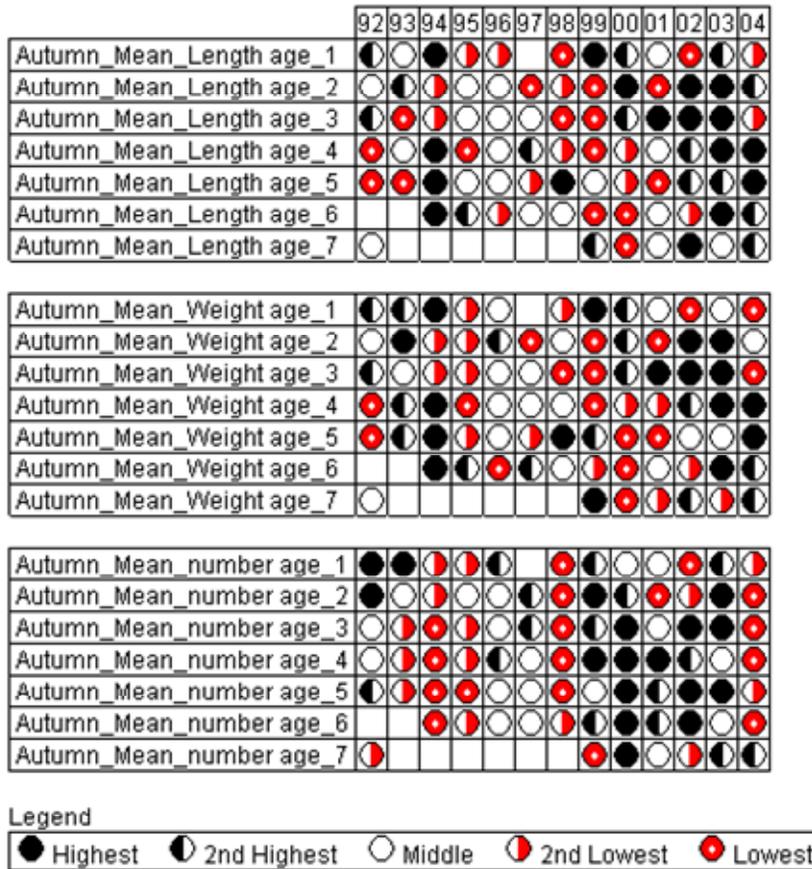


Figure 6.1.I2. Quintiles of stratified mean length, weight and number per tow of Gulf of Maine winter flounder during autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine Winter Flounder Fall Males 1992-2004

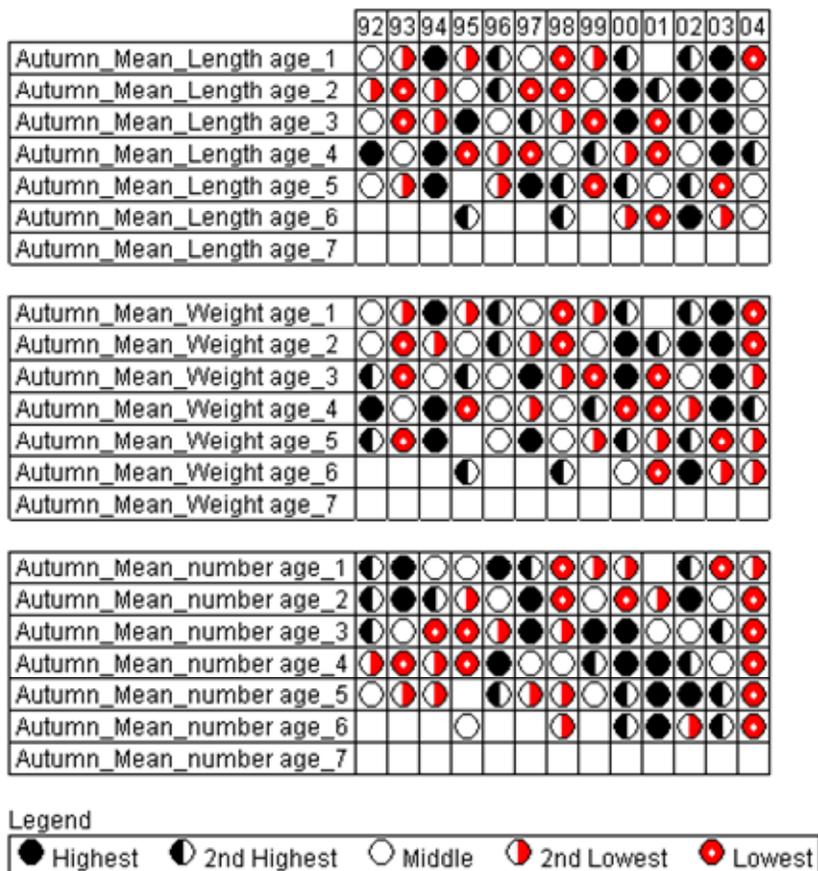


Figure 6.1.I2 cont. Quintiles of stratified mean length, weight and number per tow of Gulf of Maine winter flounder during autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine Winter Flounder Fall Males 1992-2004

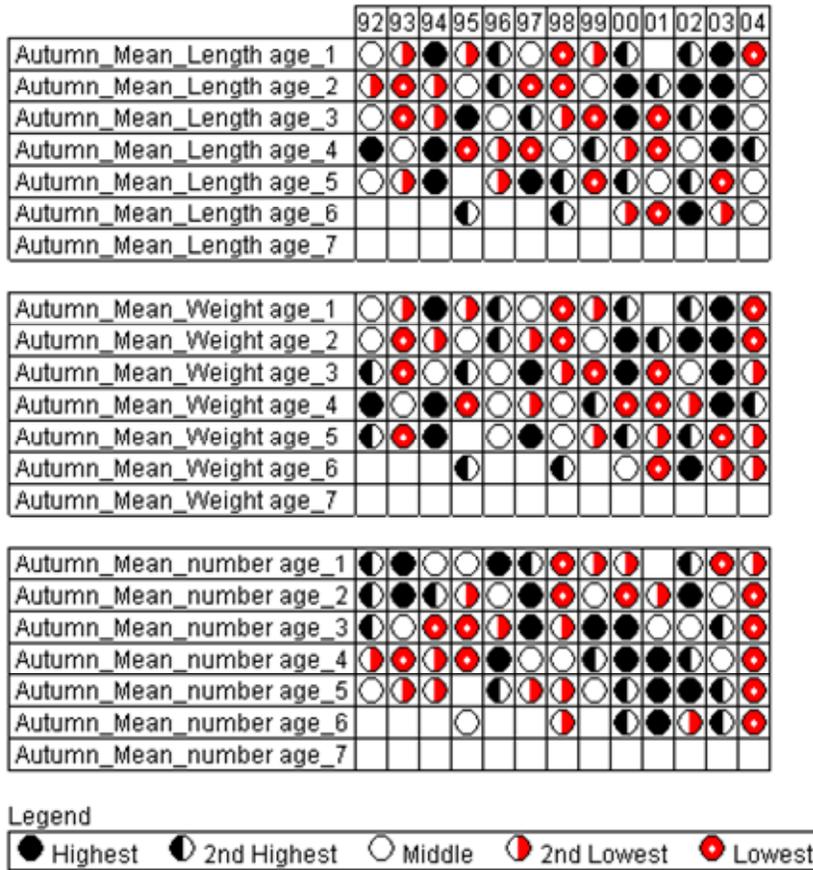


Figure 6.1.I2 cont. Quintiles of stratified mean length, weight and number per tow of Gulf of Maine winter flounder during autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine Winter Flounder Fall Males 1992-2004

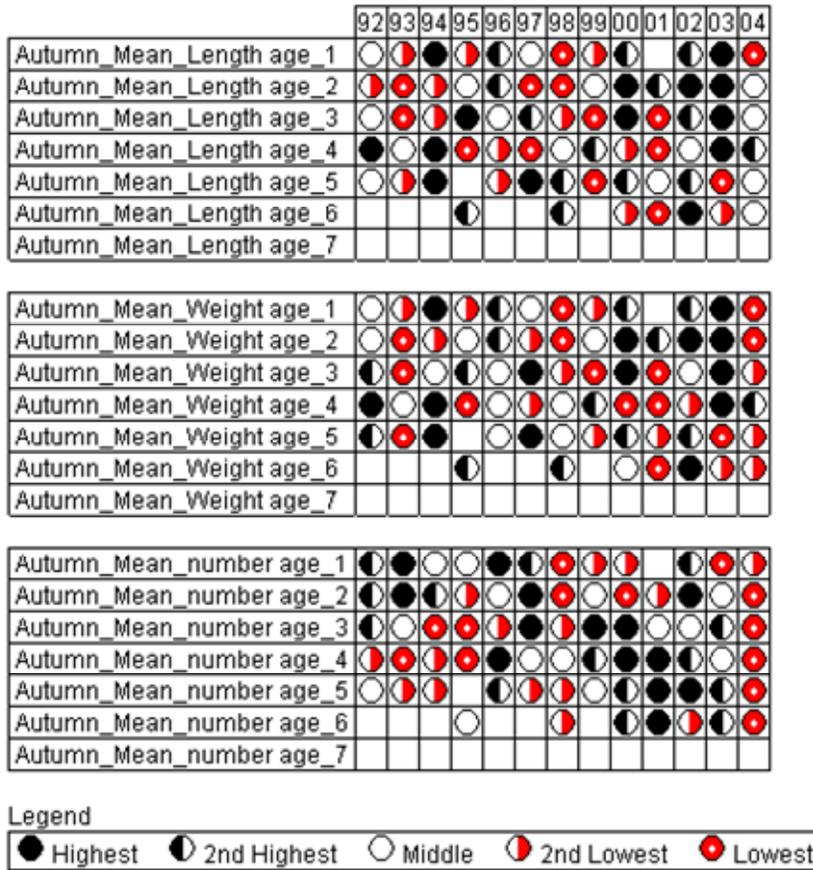


Figure 6.1.I2 cont. Quintiles of stratified mean length, weight and number per tow of Gulf of Maine winter flounder during autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine Winter Flounder Fall Males 1992-2004

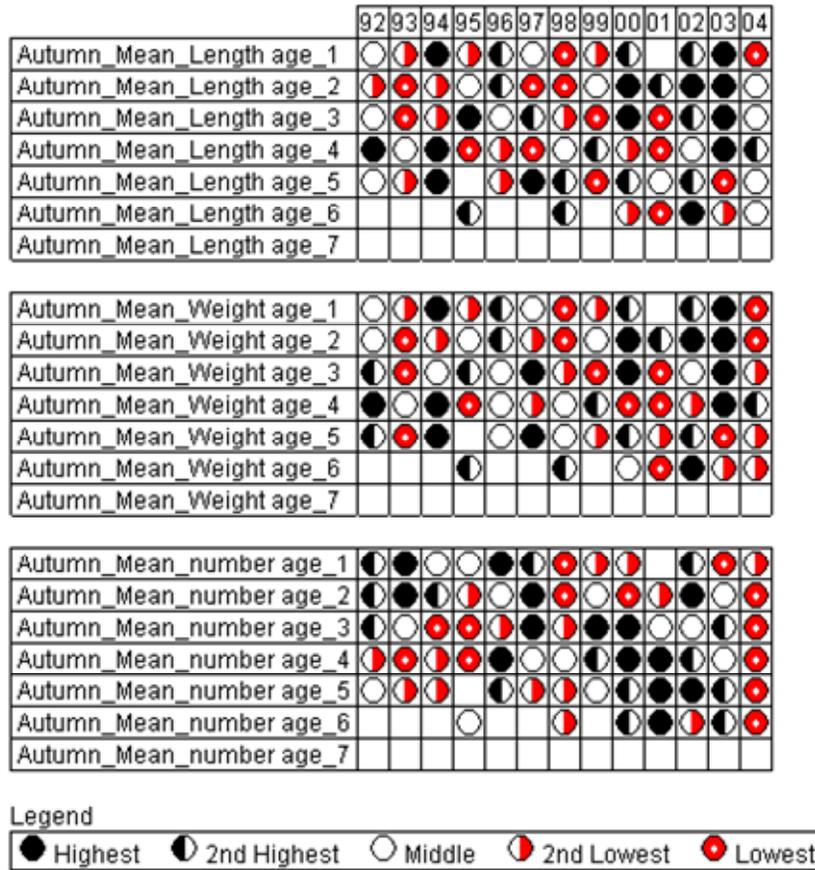


Figure 6.1.I2 cont. Quintiles of stratified mean length, weight and number per tow of Gulf of Maine winter flounder during autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine Winter Flounder Fall Comined Sex 1992-2004

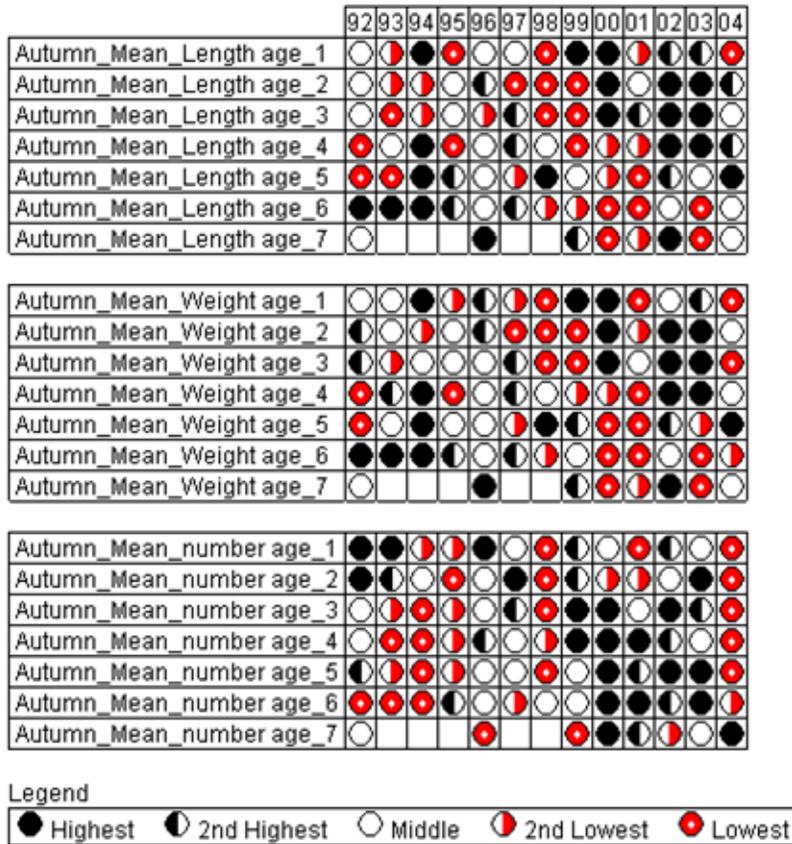


Figure 6.1.I2 cont. Quintiles of stratified mean length, weight and number per tow of Gulf of Maine winter flounder during autumn bottom trawl research surveys during 1992-2004.

Gulf of Maine Winter Flounder Fall Combined Sex 1976-2004

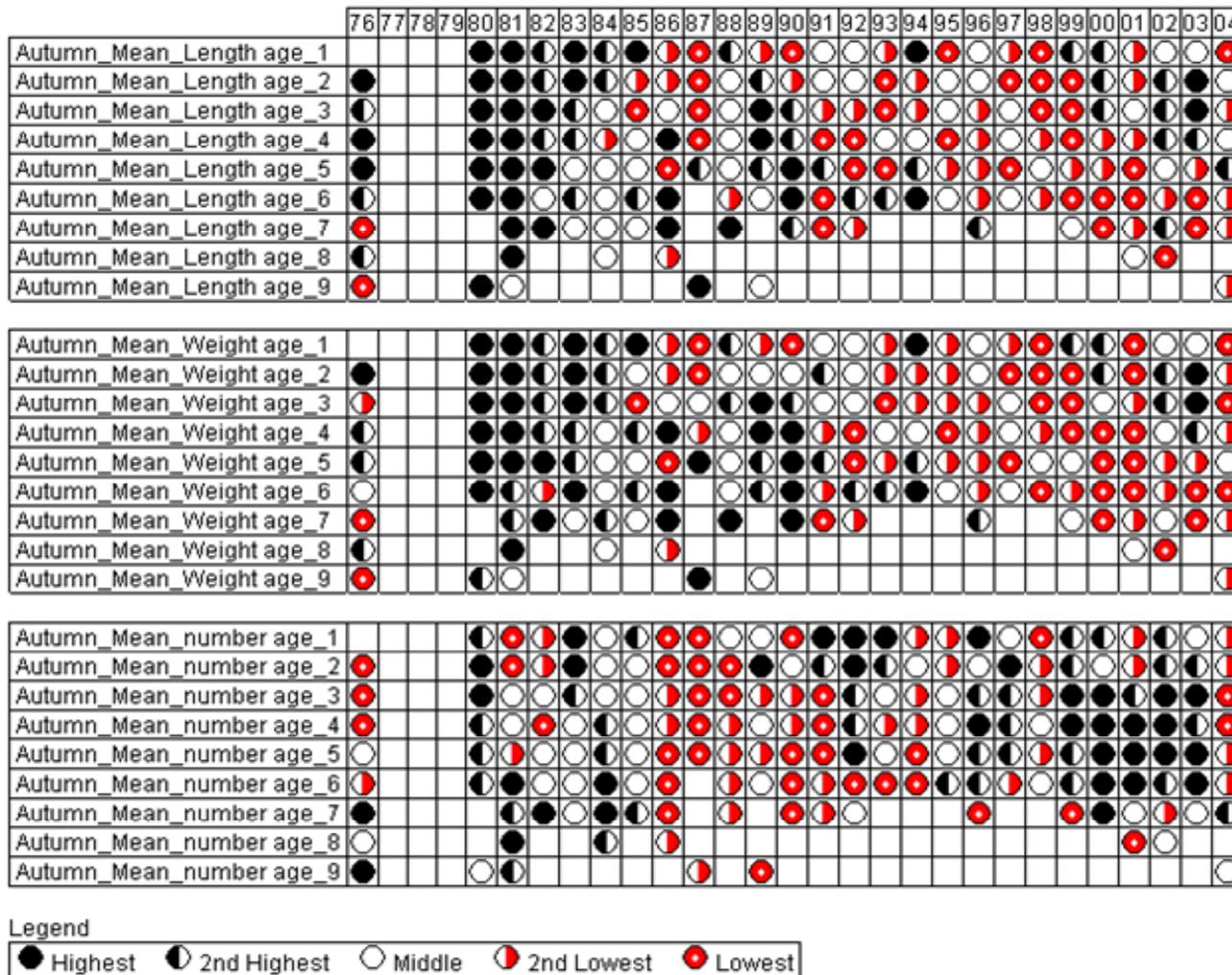


Figure 6.1.I2 cont. Quintiles of stratified mean length, weight and number per tow of Gulf of Maine winter flounder during autumn bottom trawl research surveys during 1992-2004.

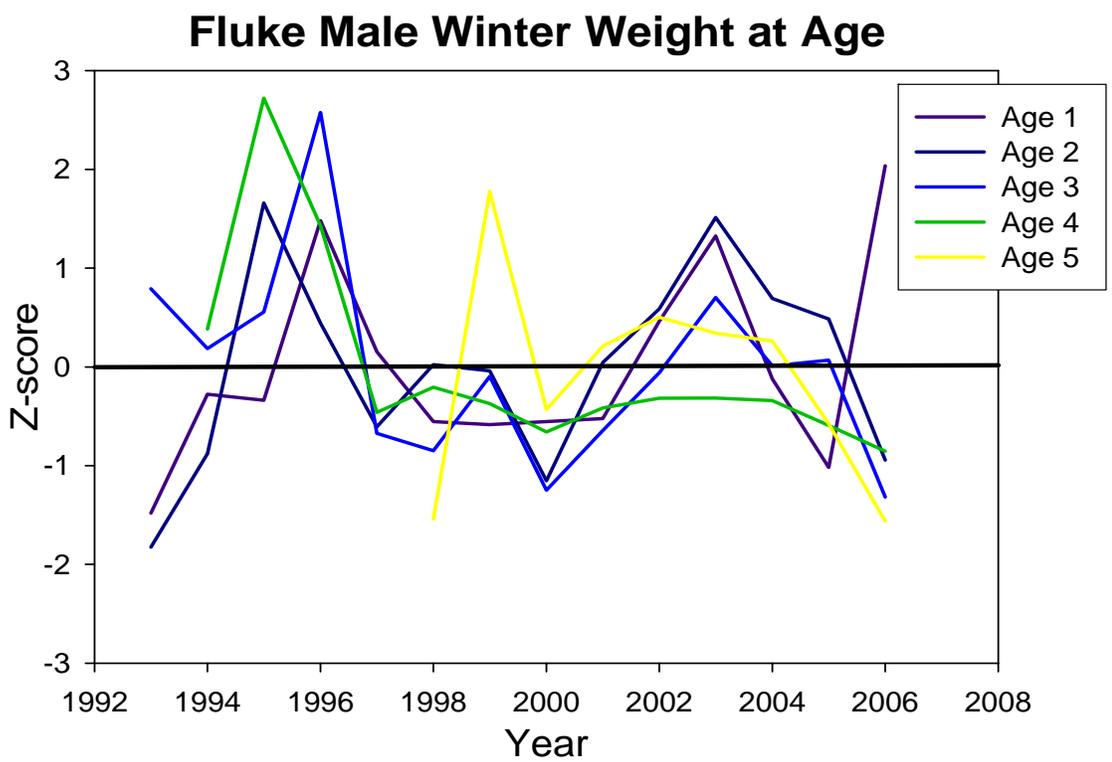
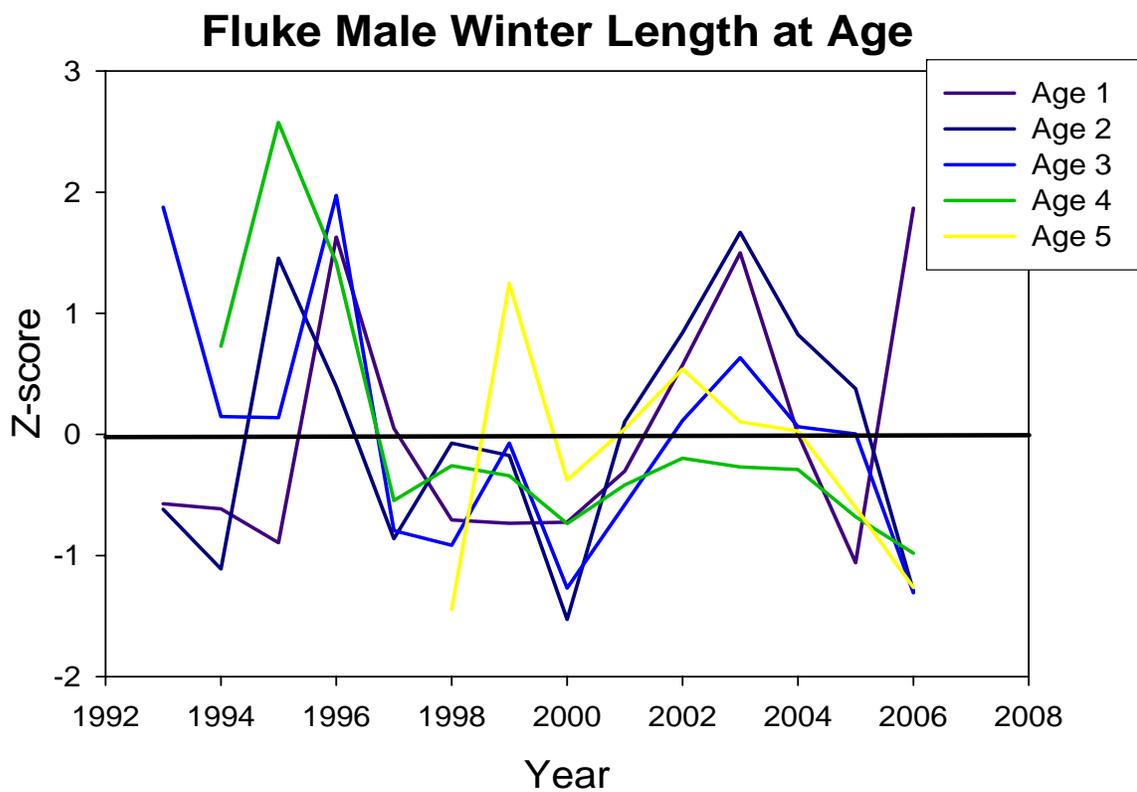


Figure 6.1.X1. Summer flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males from winter bottom trawl research surveys during 1992-2006.

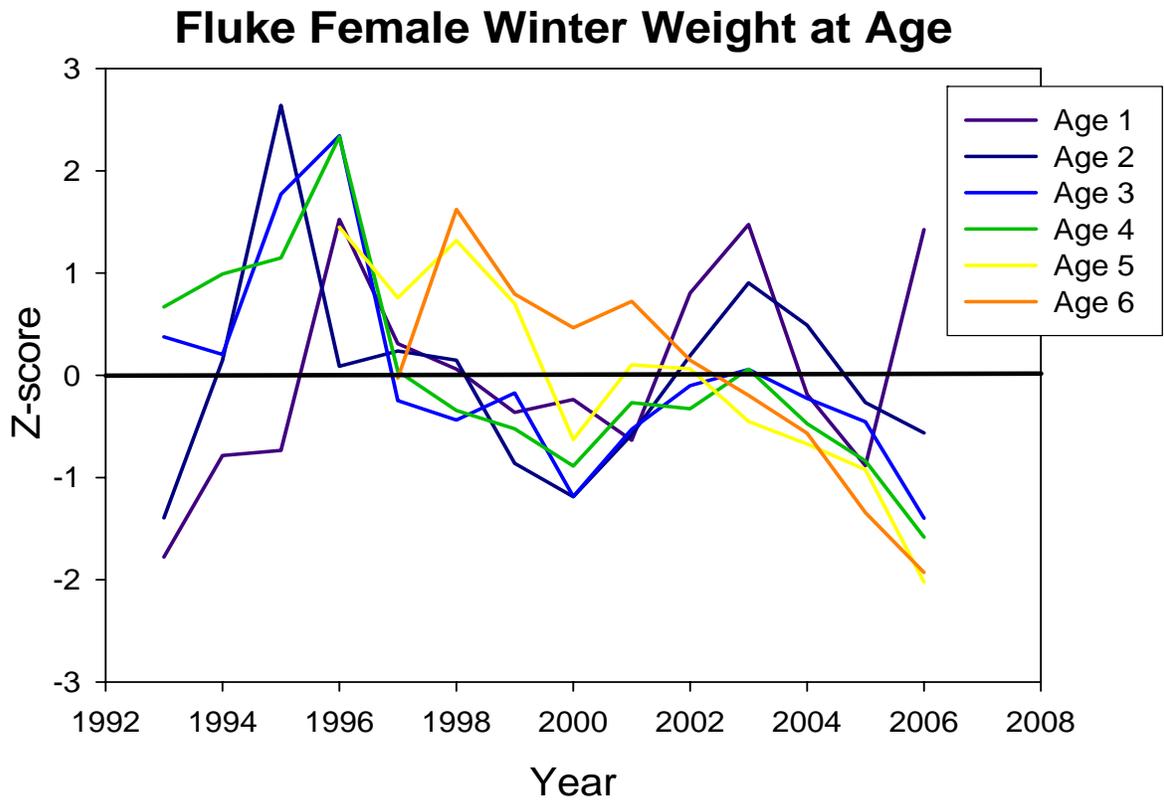
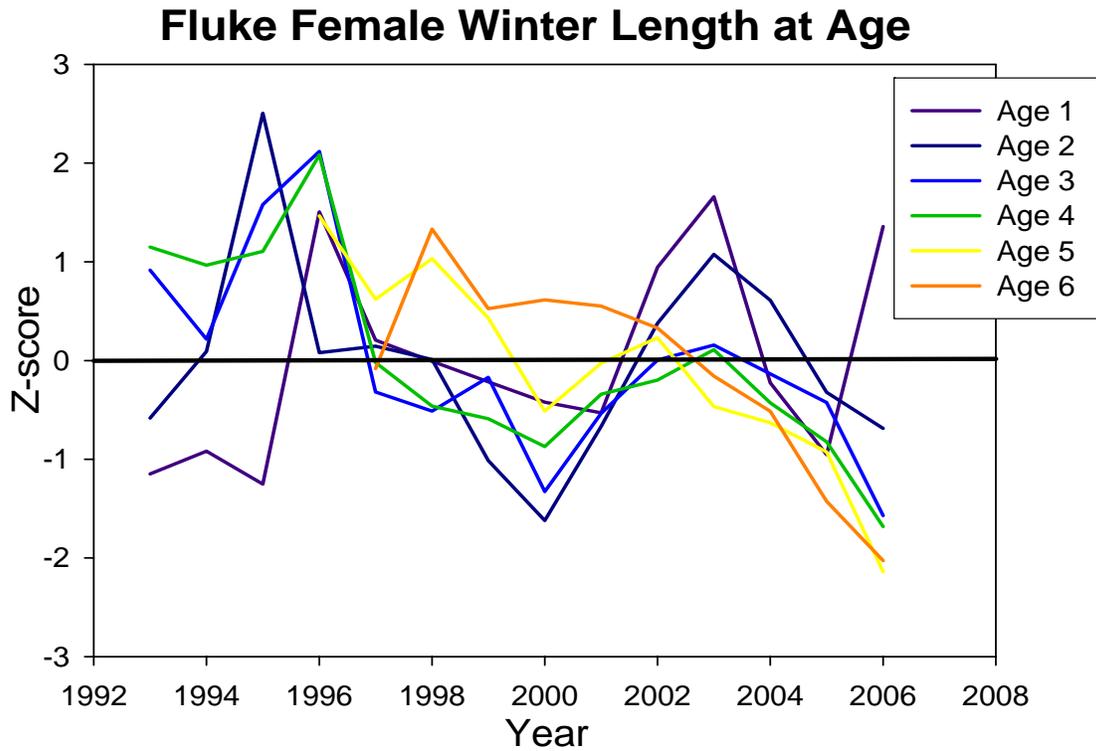


Figure 6.1.X1. Summer flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for females from winter bottom trawl research surveys during 1992-2006.

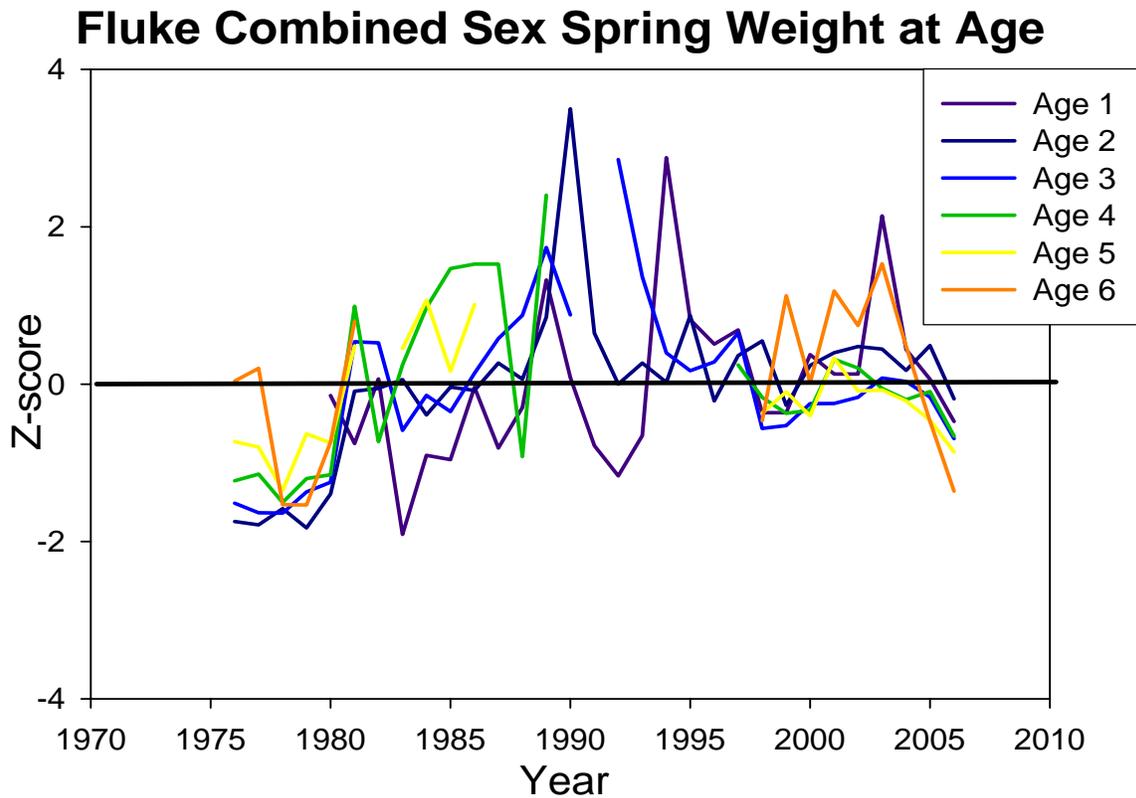
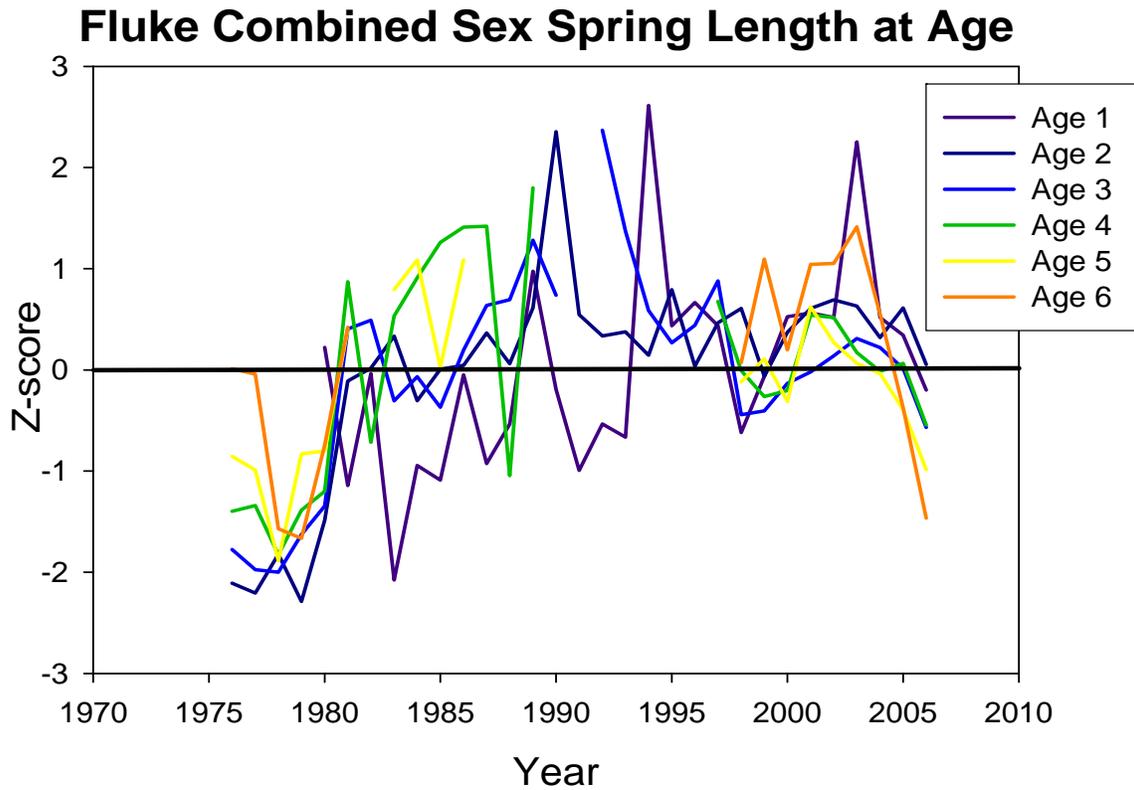


Figure 6.1.X1. Summer flounder Z-scores of stratified mean length (upper panel) and weight (lower panel) at age for males and females combined from spring bottom trawl research surveys during 1992-2006.

Fluke (Combined Sex) Winter 1993-2006

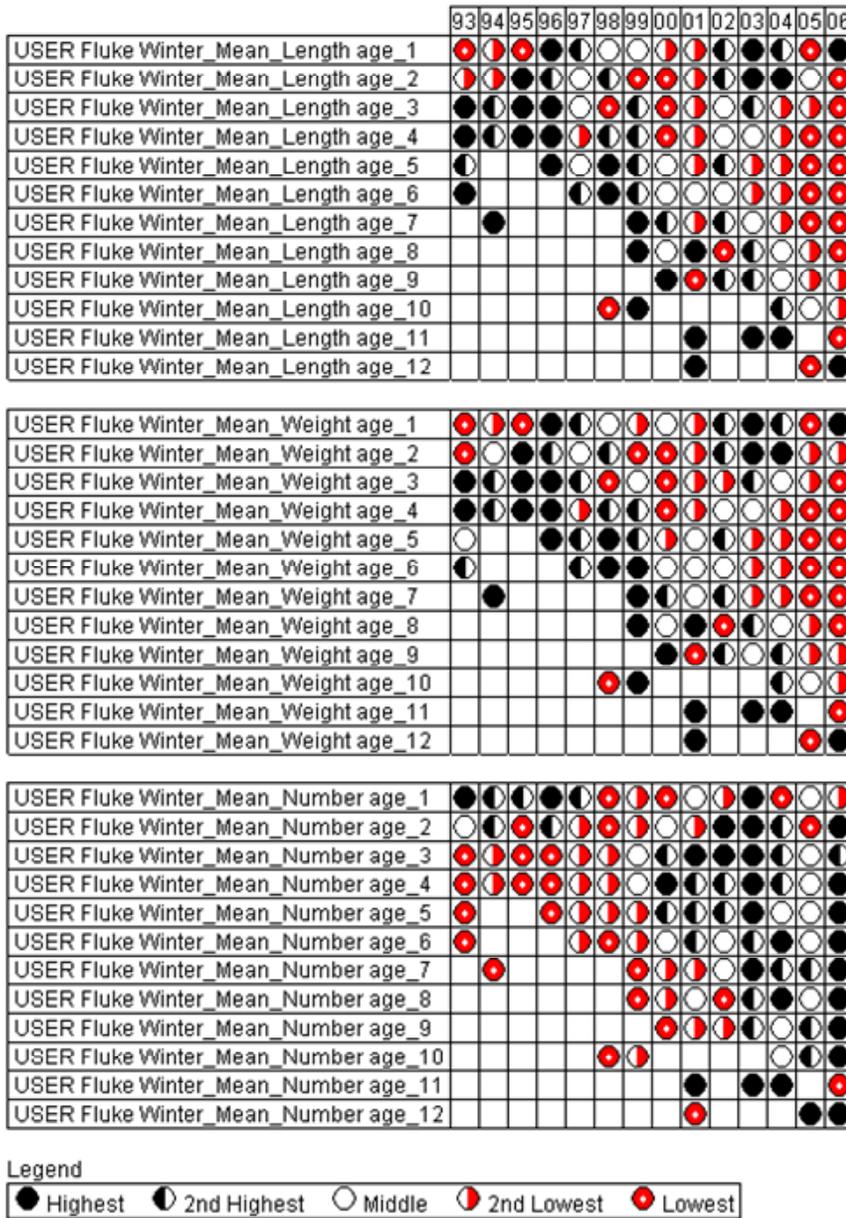


Figure 6.1.X2. Quintiles of stratified mean length, weight and number per tow of summer flounder during winter bottom trawl research surveys during 1993-2006.

Fluke (Males) Winter 1993-2006

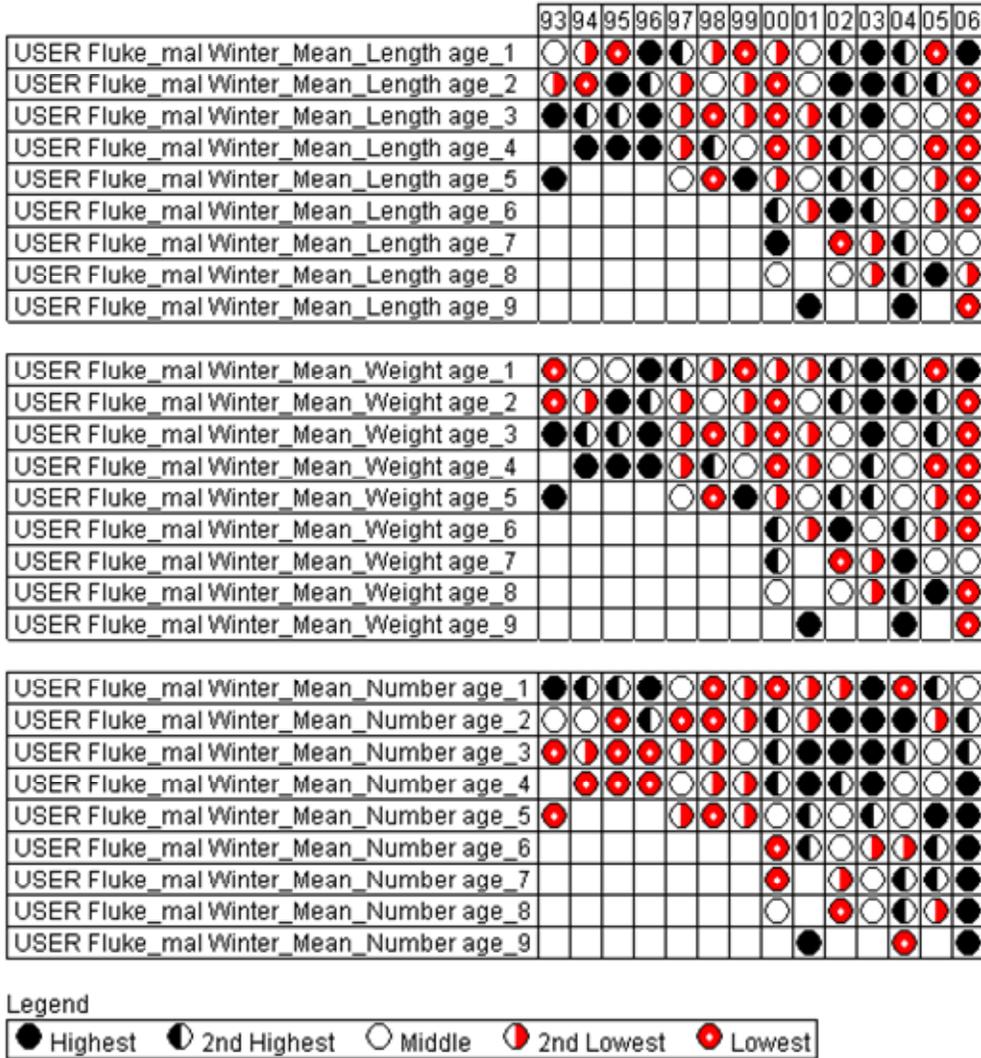


Figure 6.1.X2 cont. Quintiles of stratified mean length, weight and number per tow of summer flounder during winter bottom trawl research surveys during 1993-2006.

Fluke (Females) Winter 1993-2006

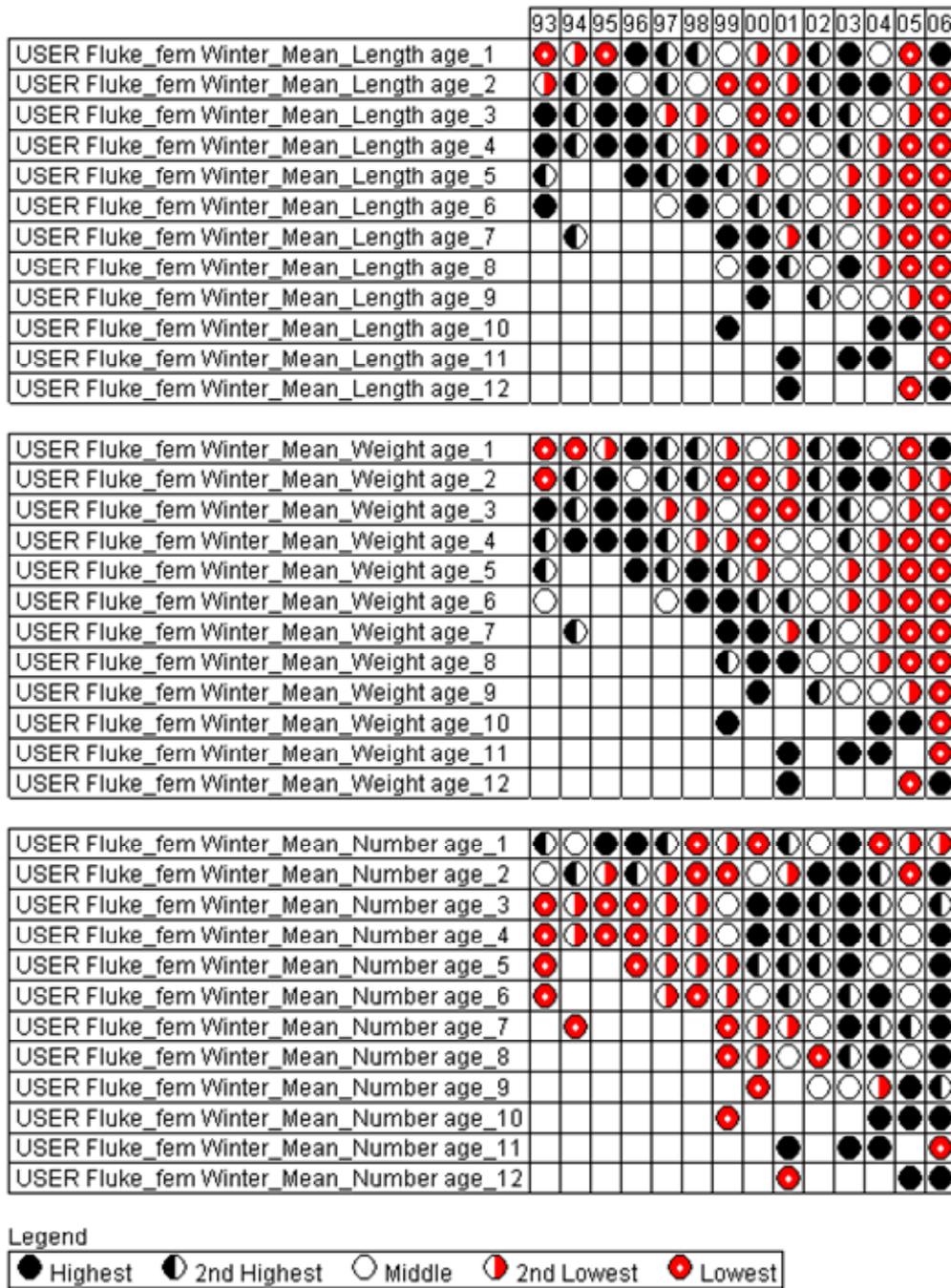


Figure 6.1.X2 cont. Quintiles of stratified mean length, weight and number per tow of summer flounder during winter bottom trawl research surveys during 1993-2006.

Fluke (Combined Sex) Spring 1976-1991

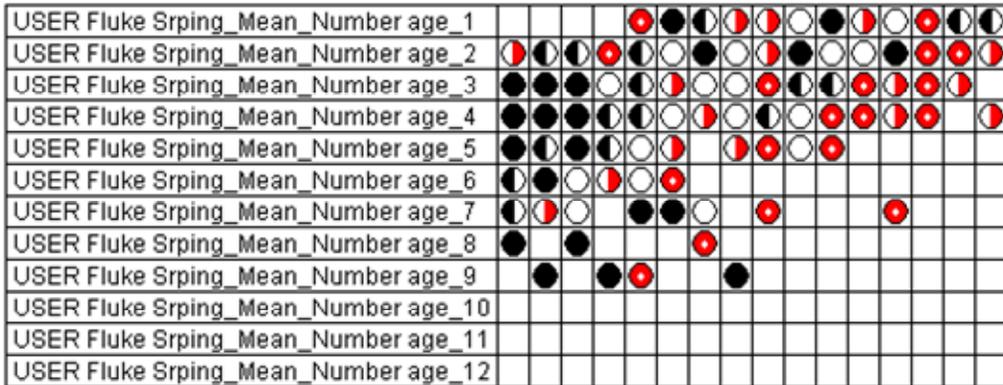
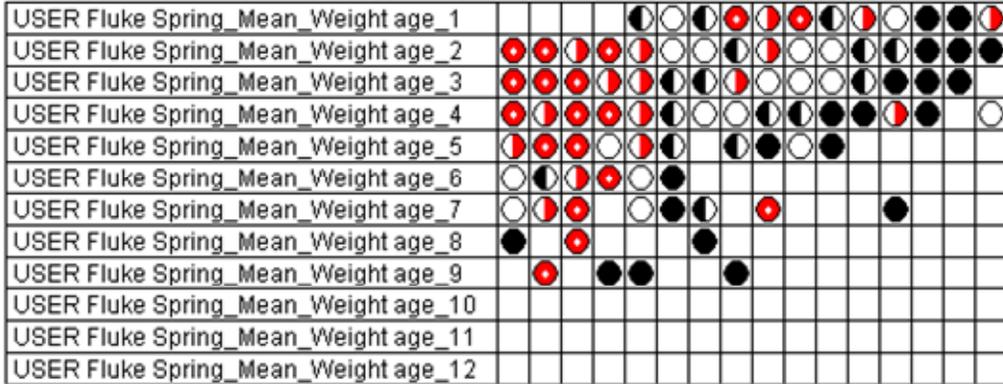
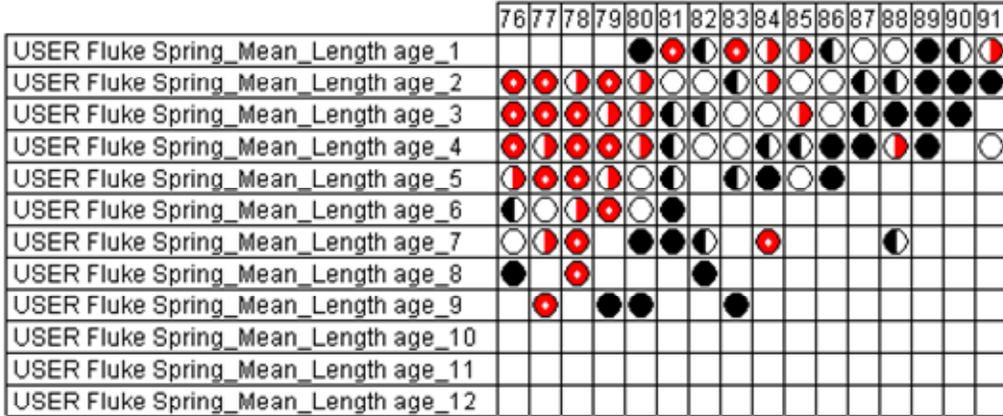


Figure 6.1.X2 cont. Quintiles of stratified mean length, weight and number per tow of summer flounder during spring bottom trawl research surveys during 1976-1991.

Fluke (Combined Sex) Spring 1992-2006

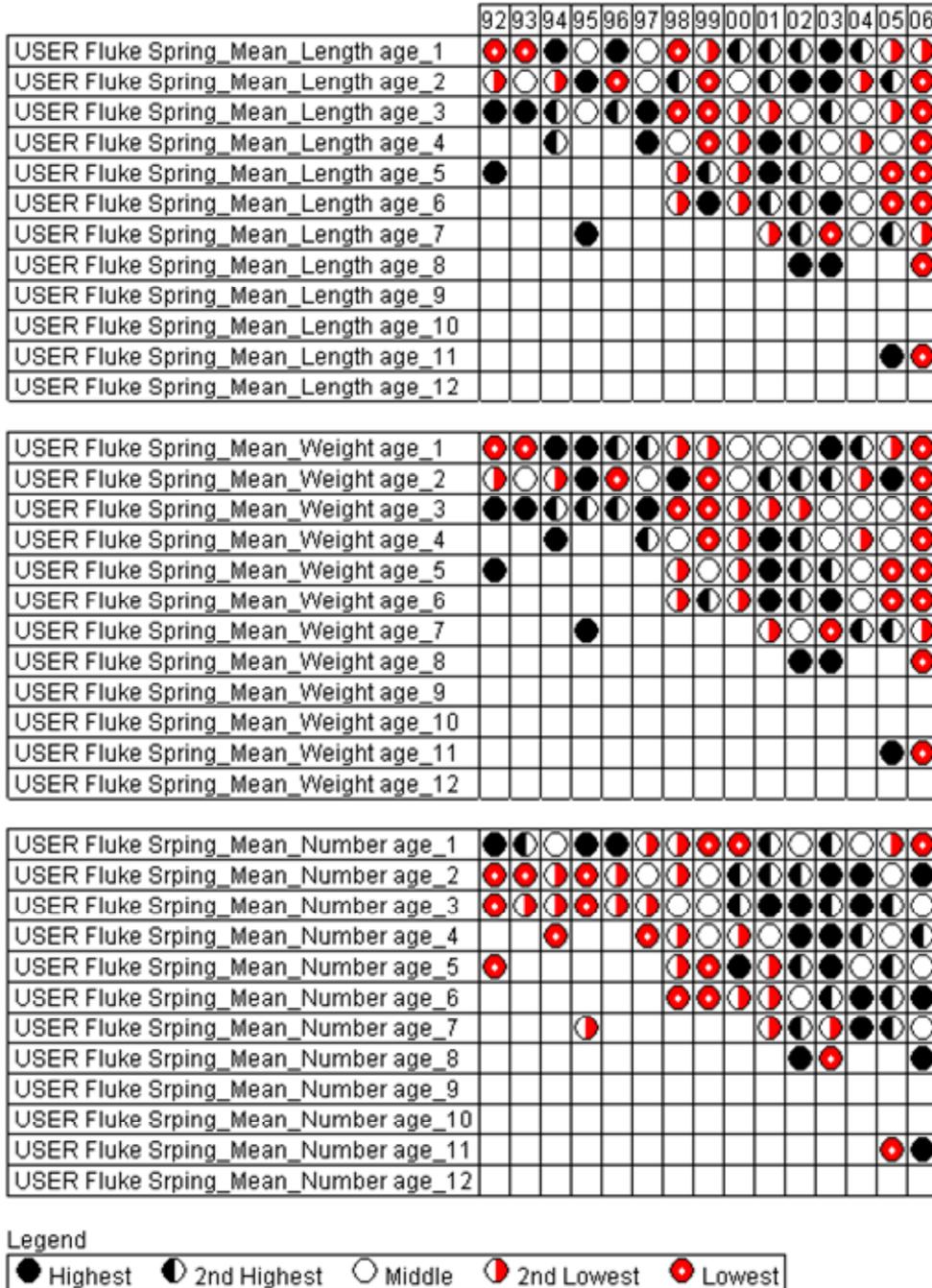


Figure 6.1.X2 cont. Quintiles of stratified mean length, weight and number per tow of summer flounder during spring bottom trawl research surveys during 1992-2006.

Fluke (Males) Spring 1992-2006

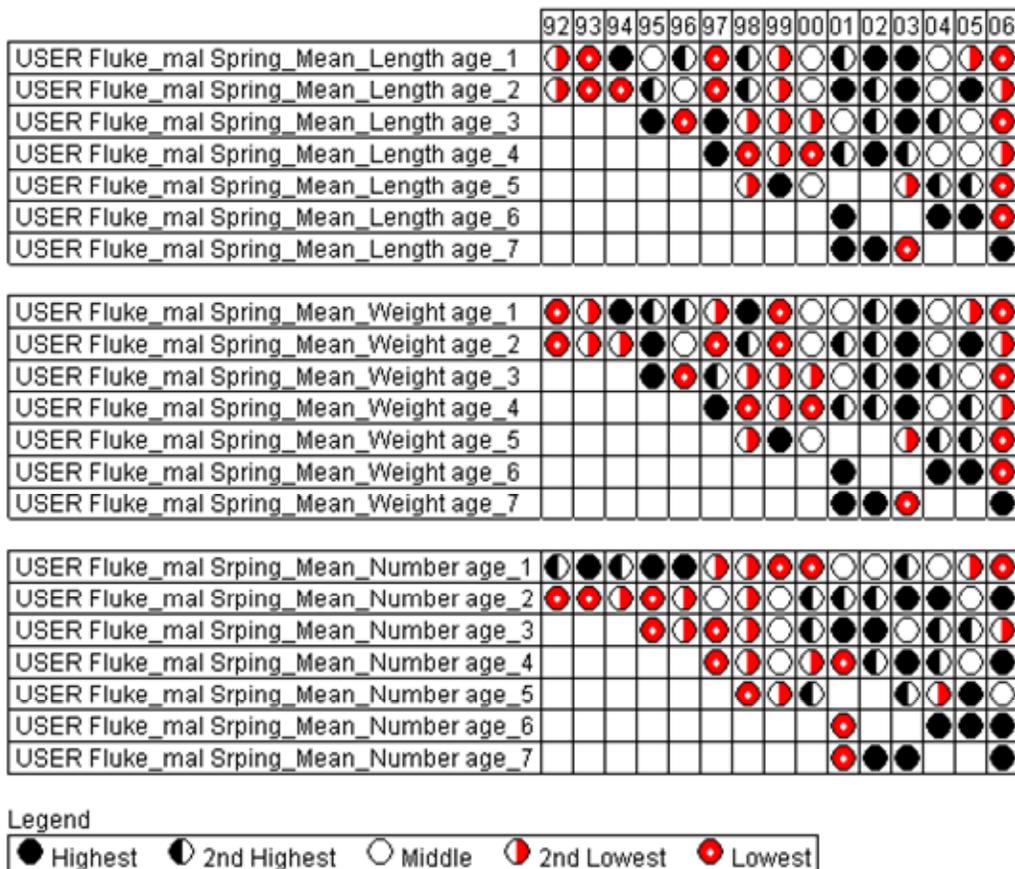


Figure 6.1.X2 cont. Quintiles of stratified mean length, weight and number per tow of summer flounder during spring bottom trawl research surveys during 1992-2006.

Fluke (Females) Spring 1992-2006

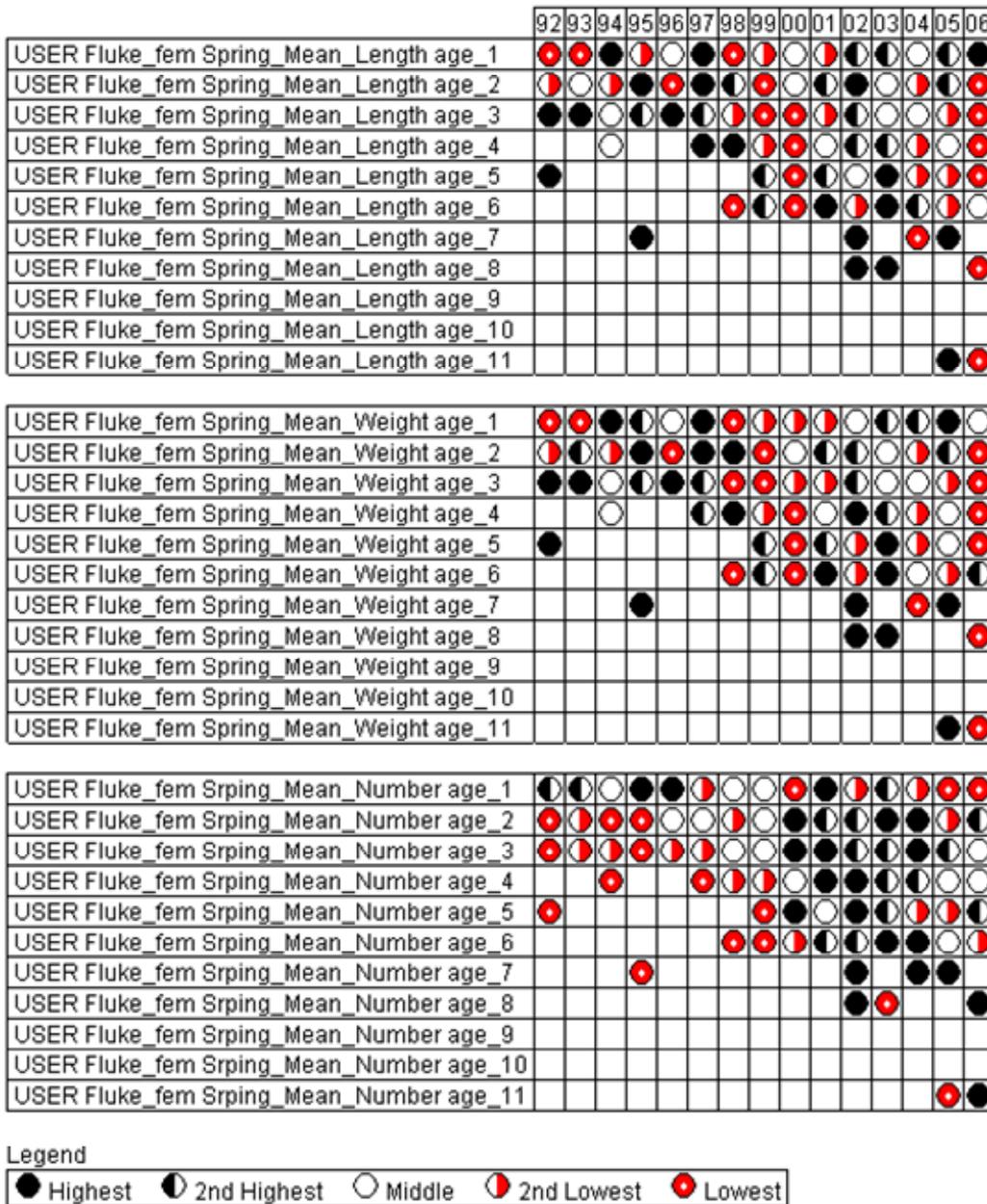


Figure 6.1.X2 cont. Quintiles of stratified mean length, weight and number per tow of summer flounder during spring bottom trawl research surveys during 1992-2006.

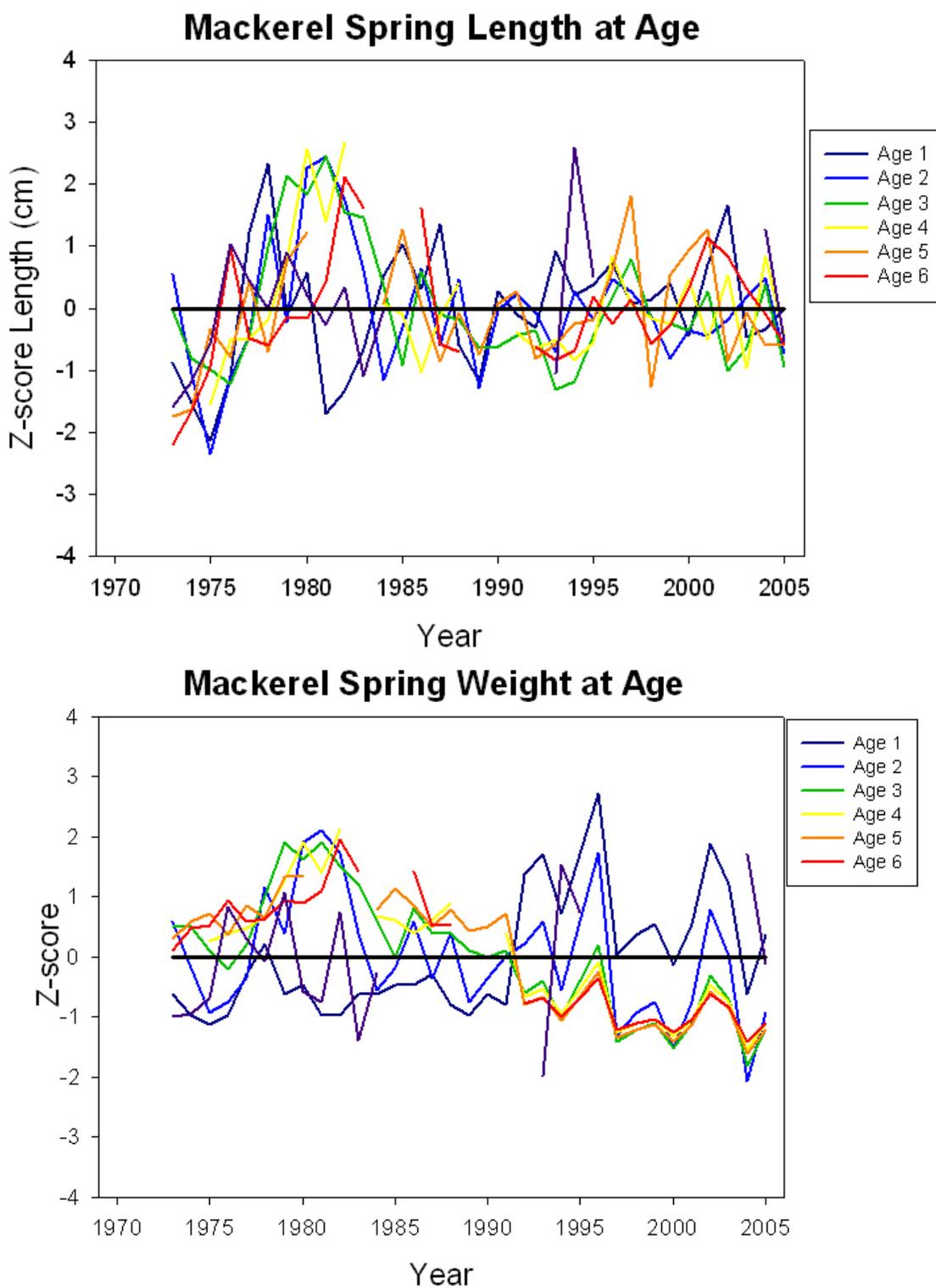


Figure 6.1.Y1. Atlantic mackerel Z-scores of stratified mean length (upper panel) and weight (lower panel) at age from spring bottom trawl research surveys during 1973-2005.

Mackerel Spring 1992-2005

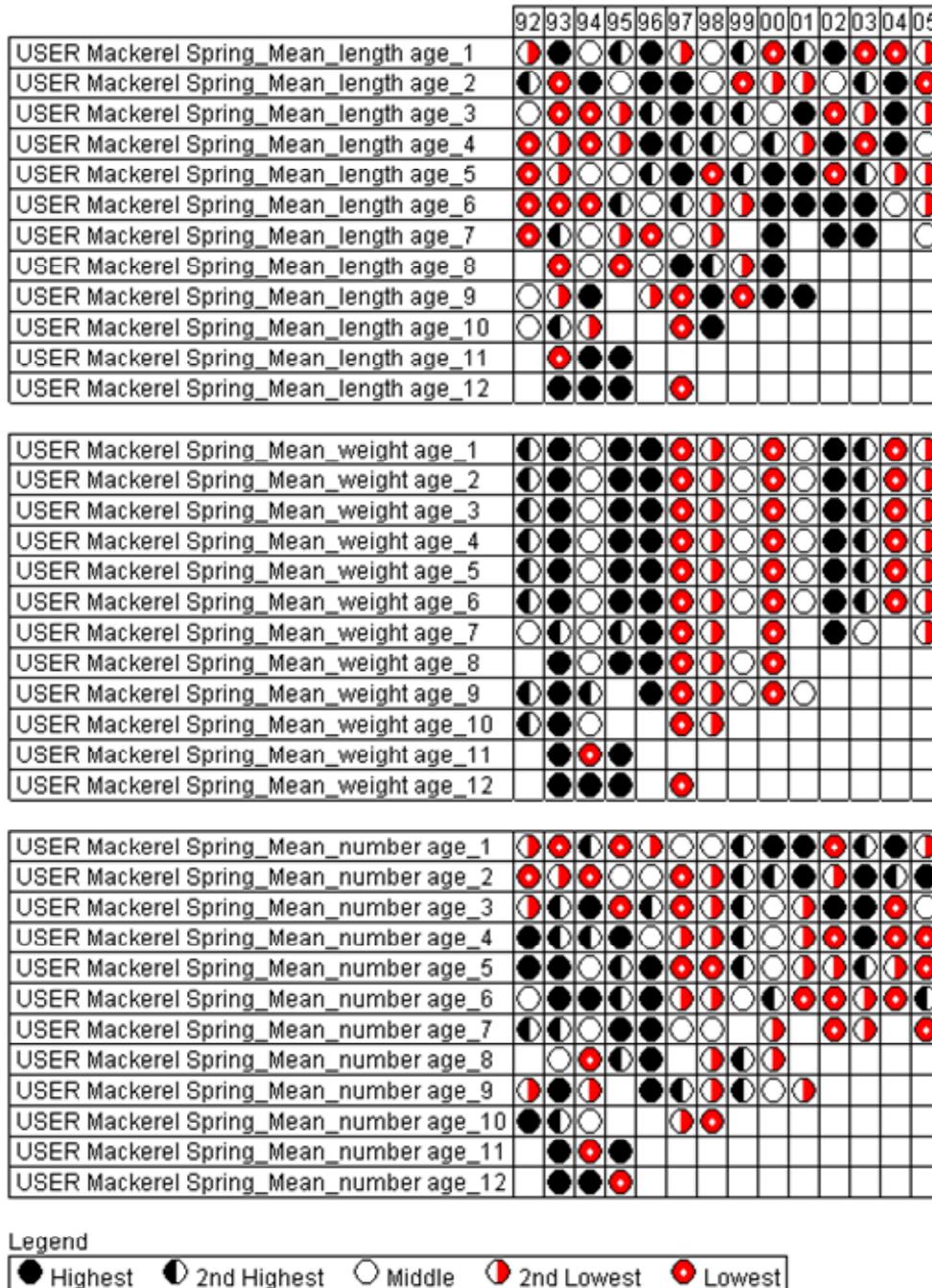
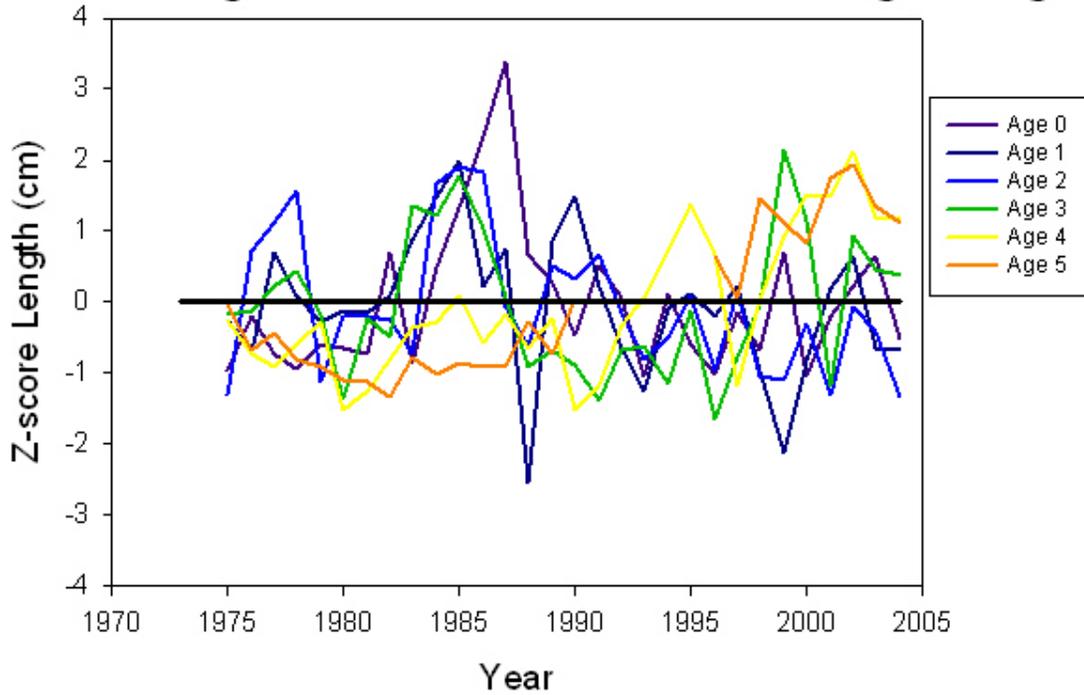


Figure 6.1.Y2 cont. Quintiles of stratified mean length, weight and number per tow of Atlantic mackerel during spring bottom trawl research surveys during 1992-2005.

Northern Georges Bank Silver Hake Autumn Length at Age



Northern Georges Bank Silver Hake Autumn Weight at Age

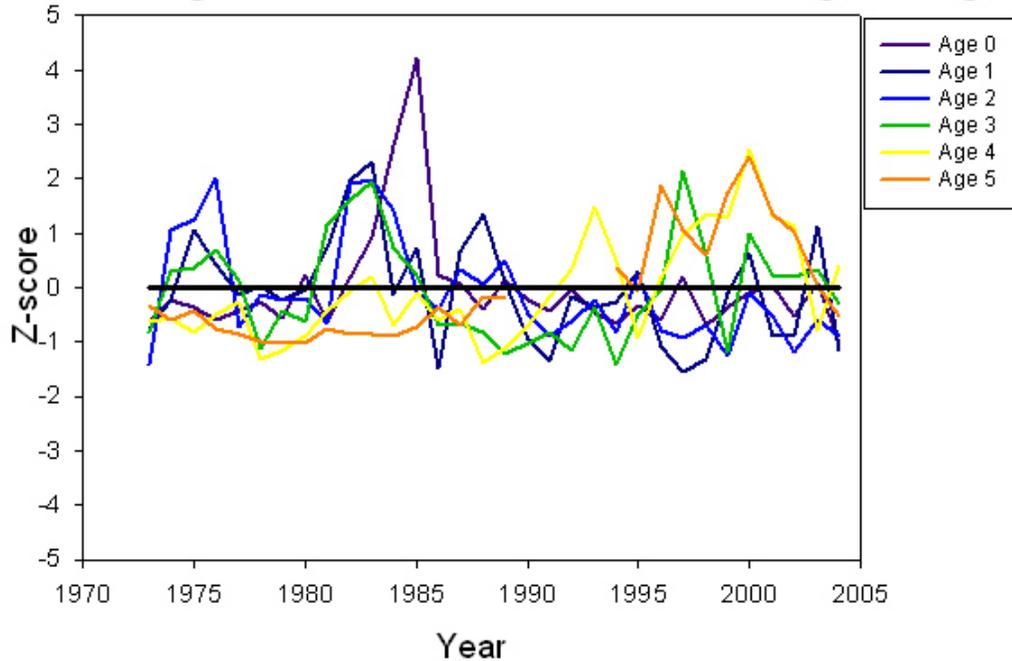


Figure 6.1.Z1. Northern Georges Bank silver hake Z-scores of stratified mean length (upper panel) and weight (lower panel) at age from spring bottom trawl research surveys during 1973-2004.

Silver Hake Fall 1992-2004

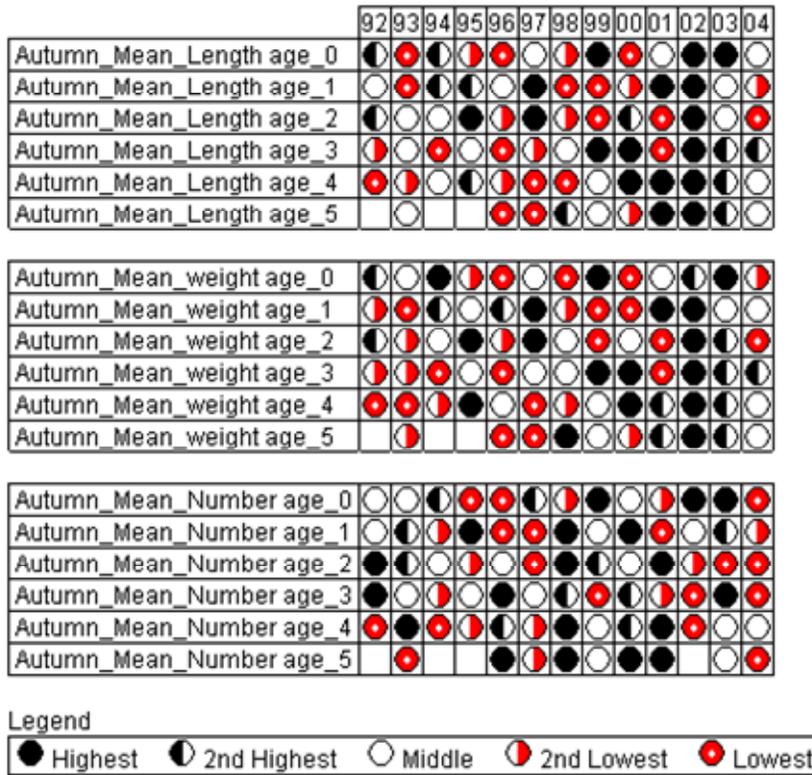


Figure 6.1.Z2 cont. Quintiles of stratified mean length, weight and number per tow of Northern Georges Bank silver hake during spring bottom trawl research surveys during 1973-2004.