

Do Different Sampling Methods Yield Consistent and Correlated Results for Finfish?

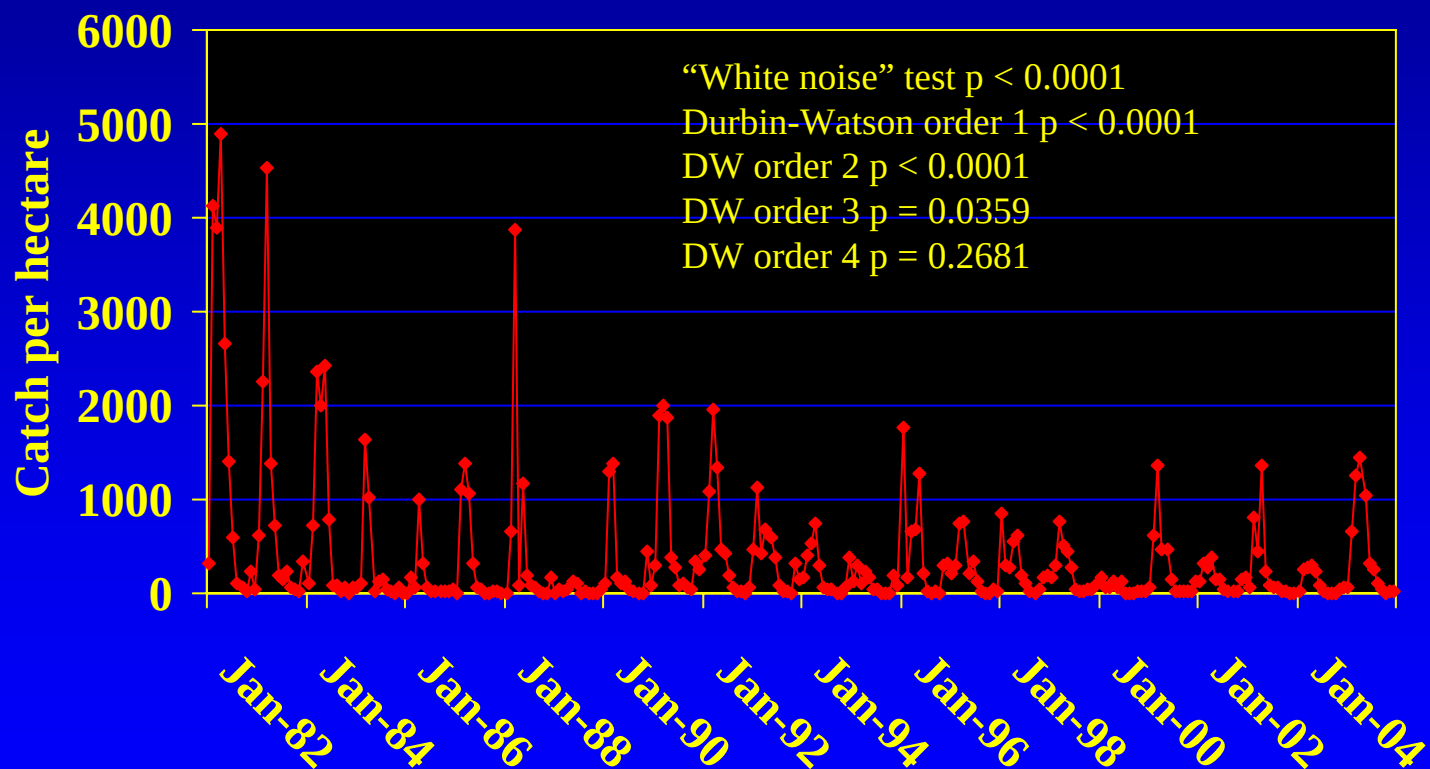
Galveston Bay Atlantic Croaker from
Bag Seines, Trawls, and Gill Nets
1982-2005

Mark R. Fisher, Ph.D.
Rockport Marine Lab

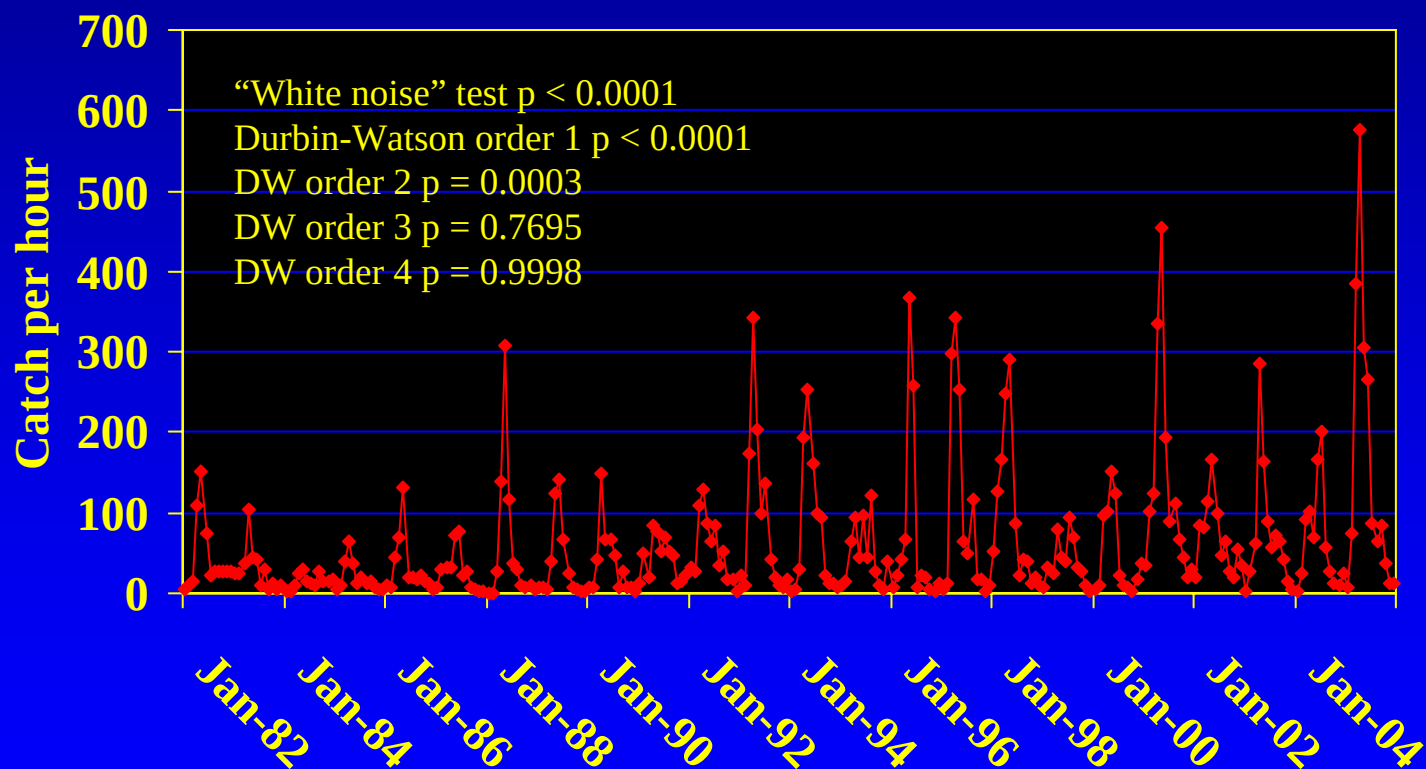
Atlantic Croaker Life History

- Nearshore Gulf spawners, peak in Oct-Nov.
- Adults return to estuaries in spring.
- Juveniles reach 160-180 mm their first year, Age 2 fish 250-280 mm, age 3 320-340 mm.
- Maximum age is 7 years, most don't live past age 3. Maturity is reached at age 1.
- Migration to the Gulf begins in summer, peaks in fall.

Atlantic Croaker CPUE by Month, Galveston Bay Bag Seine Data



Atlantic Croaker CPUE by Month, Galveston Bay Trawl Data



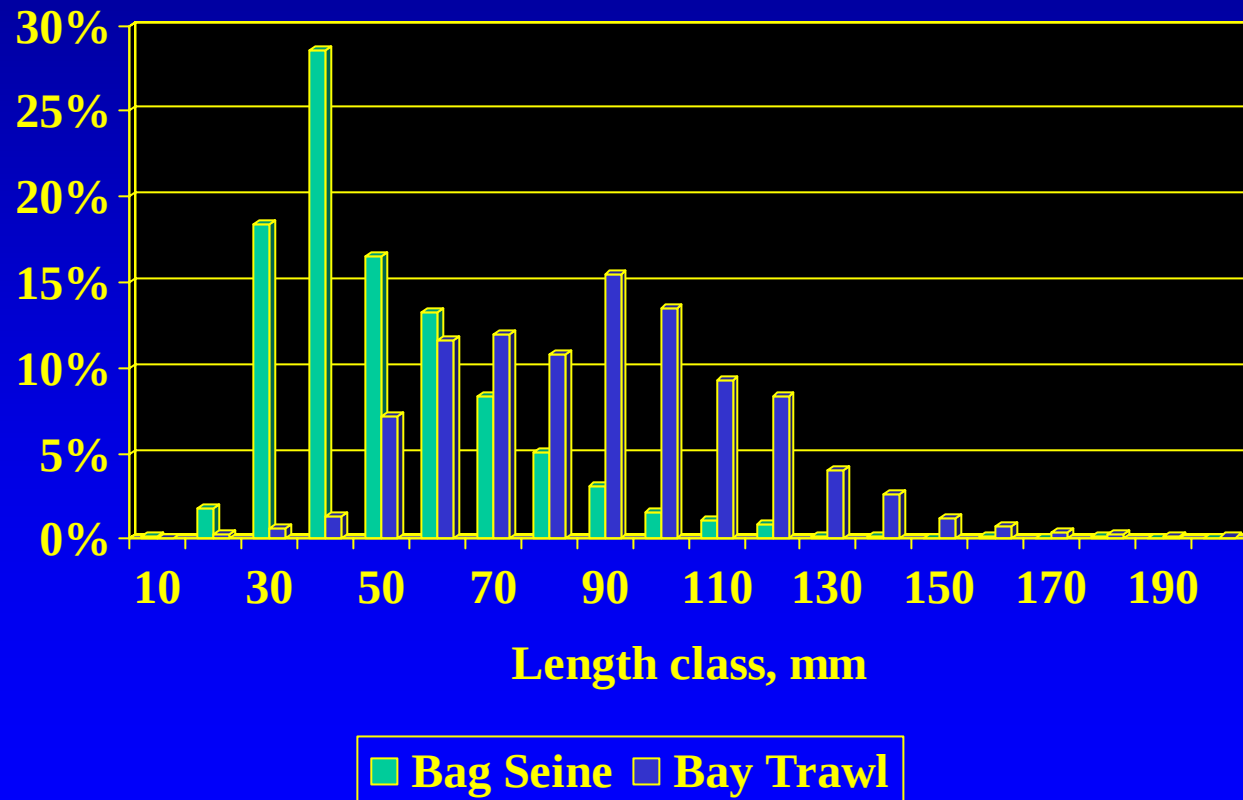
Percent Catch of Atlantic Croaker, by Month



Spearman Correlation Matrix

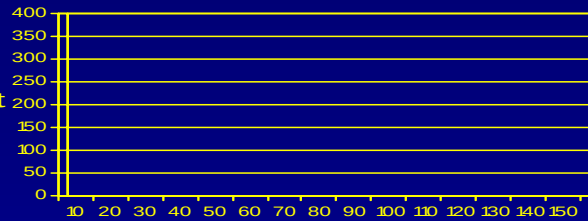
	Trawl	Bag seine	Bag seine 1 month lag	Bag seine 2 month lag	Bag seine 3 month lag
Trawl	1.000	-	-	-	-
Bag seine	0.3664 p < 0.0001	1.000	-	-	-
Bag seine 1 month lag	0.5557 p < 0.0001	0.6734 p < 0.0001	1.000	-	-
Bag seine 2 month lag	0.5647 p < 0.0001	0.4349 p < 0.0001	0.6727 p < 0.0001	1.000	-
Bag seine 3 month lag	0.4719 p < 0.0001	0.1239 p = 0.0366	0.4318 p < 0.0001	0.6722 p < 0.0001	1.000

Length-Frequency of Atlantic Croaker, by Gear

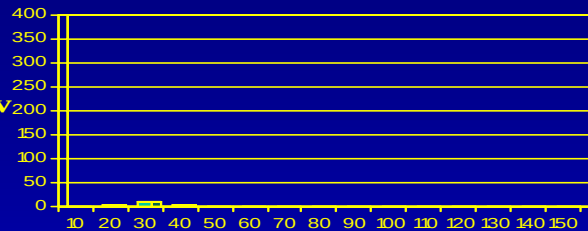


Galveston Bag Seine Lengths 2004-05

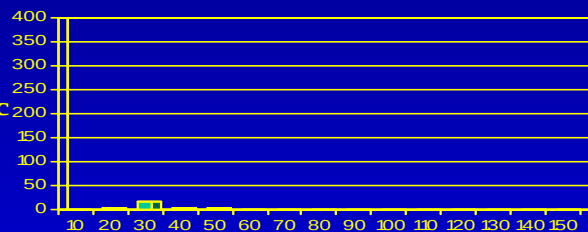
Oct



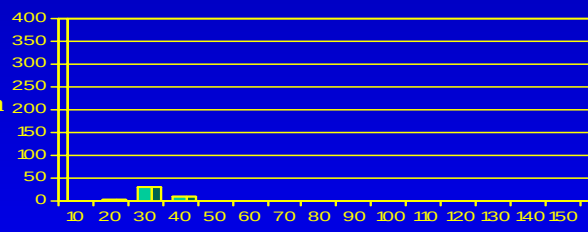
Nov



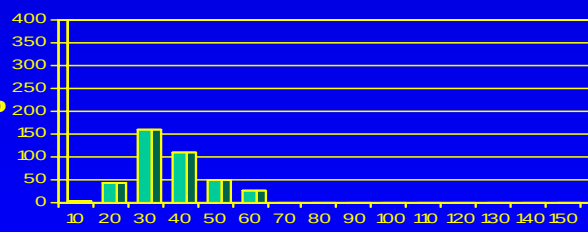
Dec



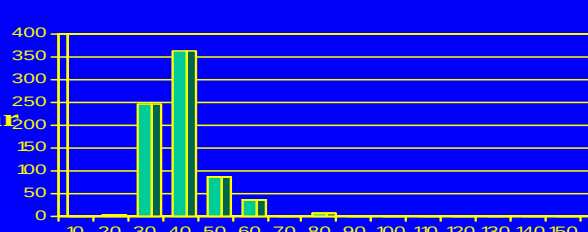
Jan



Feb

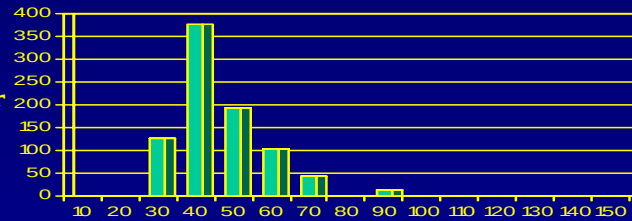


Mar

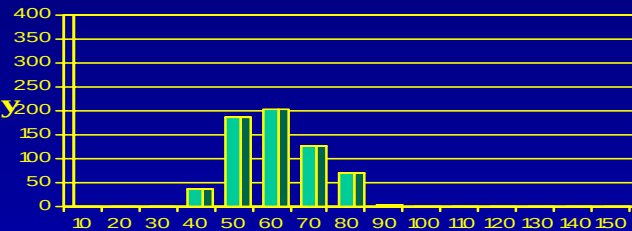


Length class, mm

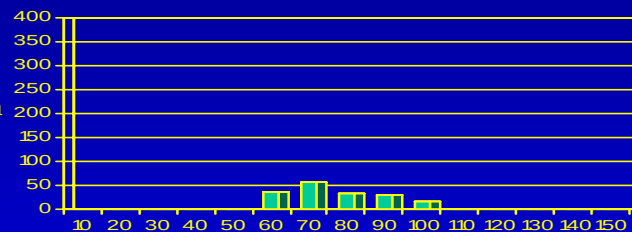
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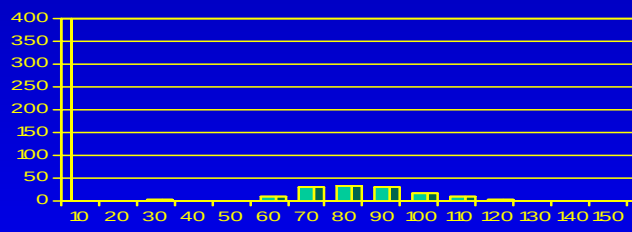
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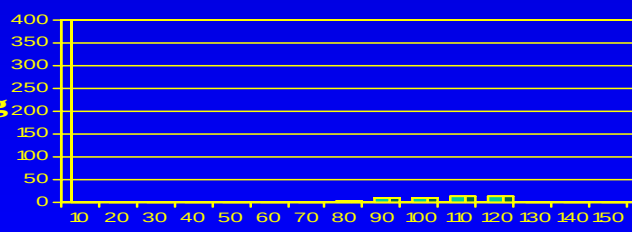
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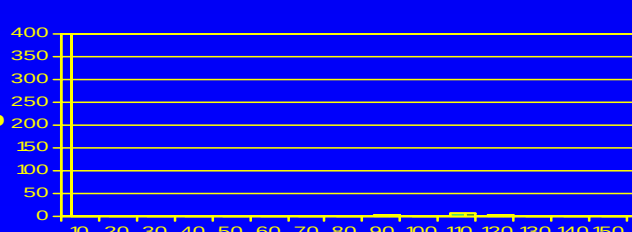
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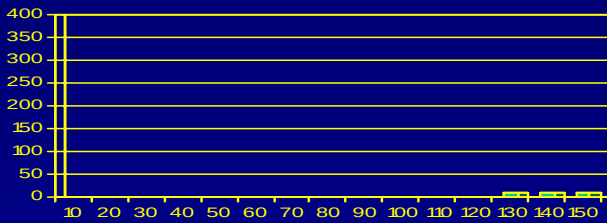
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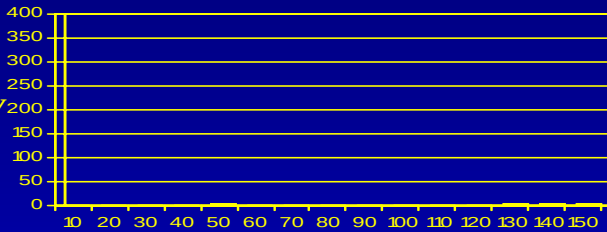
Length class, mm

Galveston Bay Trawl Lengths 2004-05

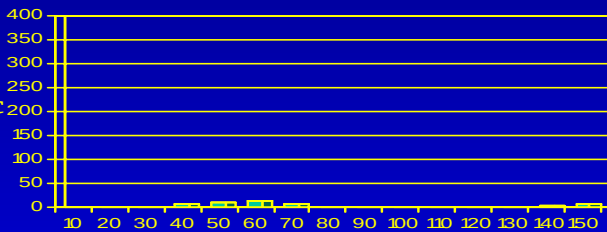
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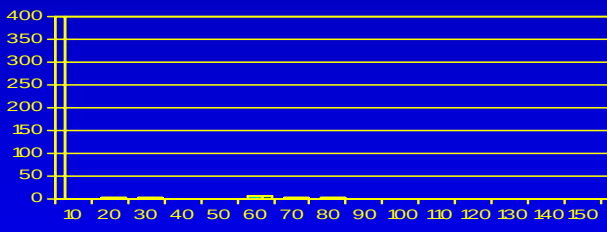
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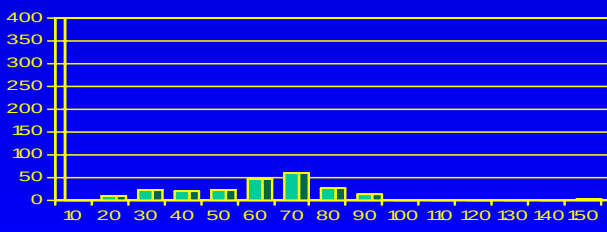
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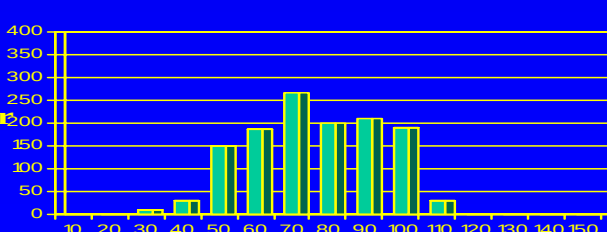
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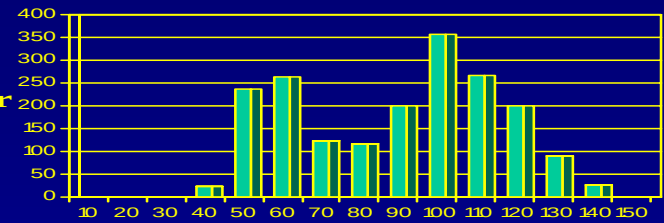


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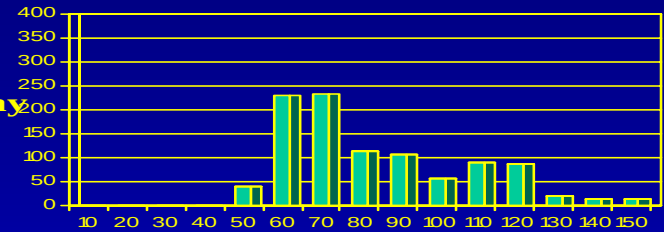


Length class, mm

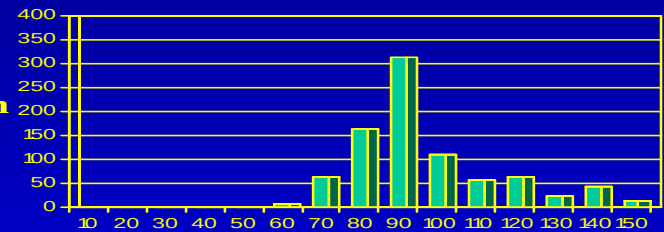
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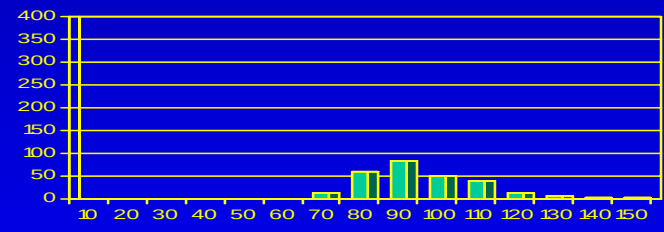
May



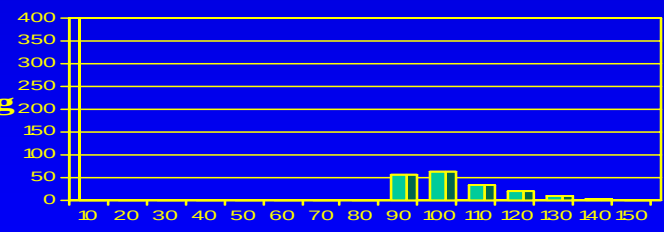
Jun



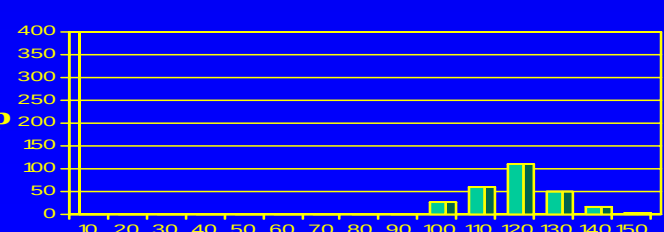
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Aug

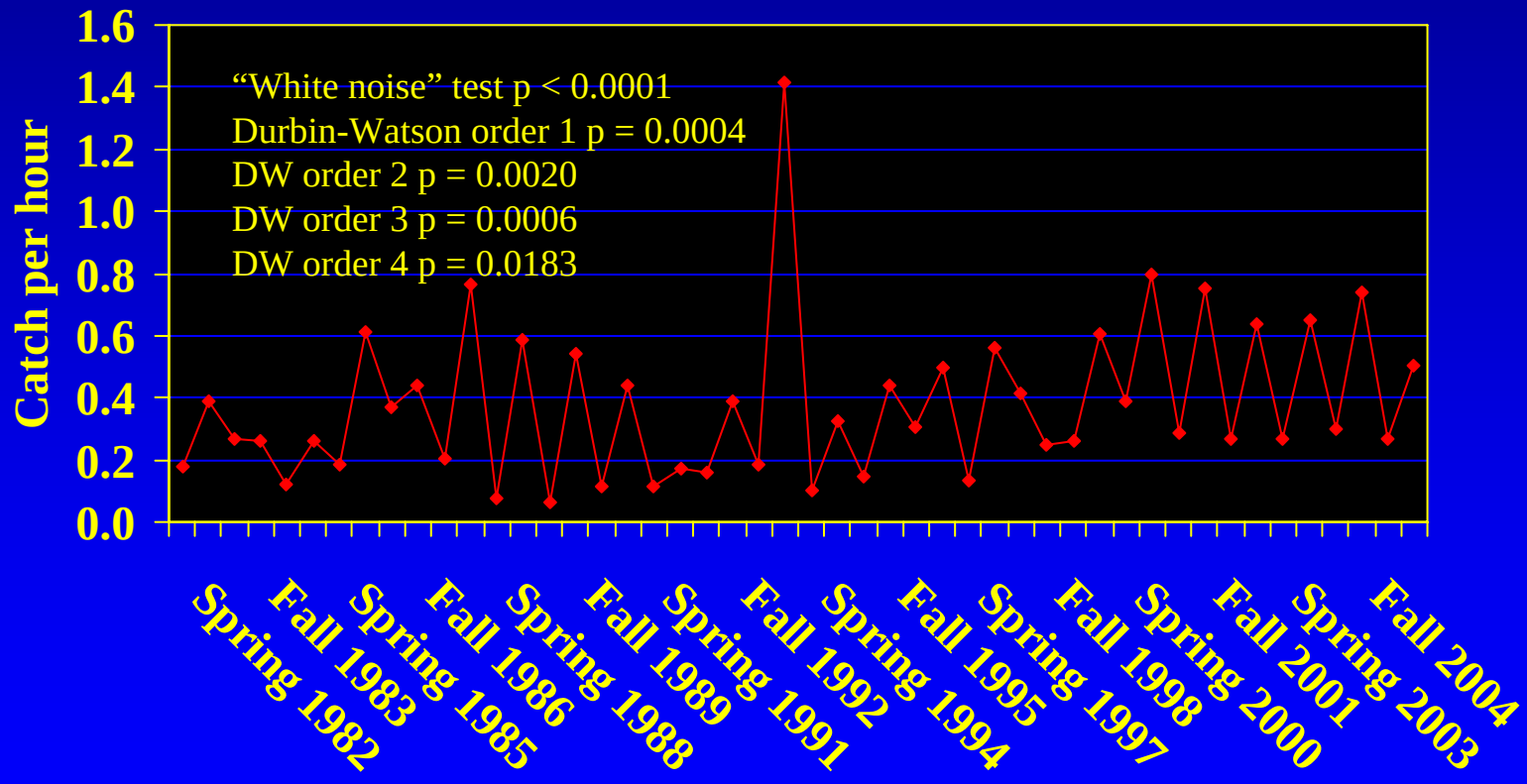


Sep

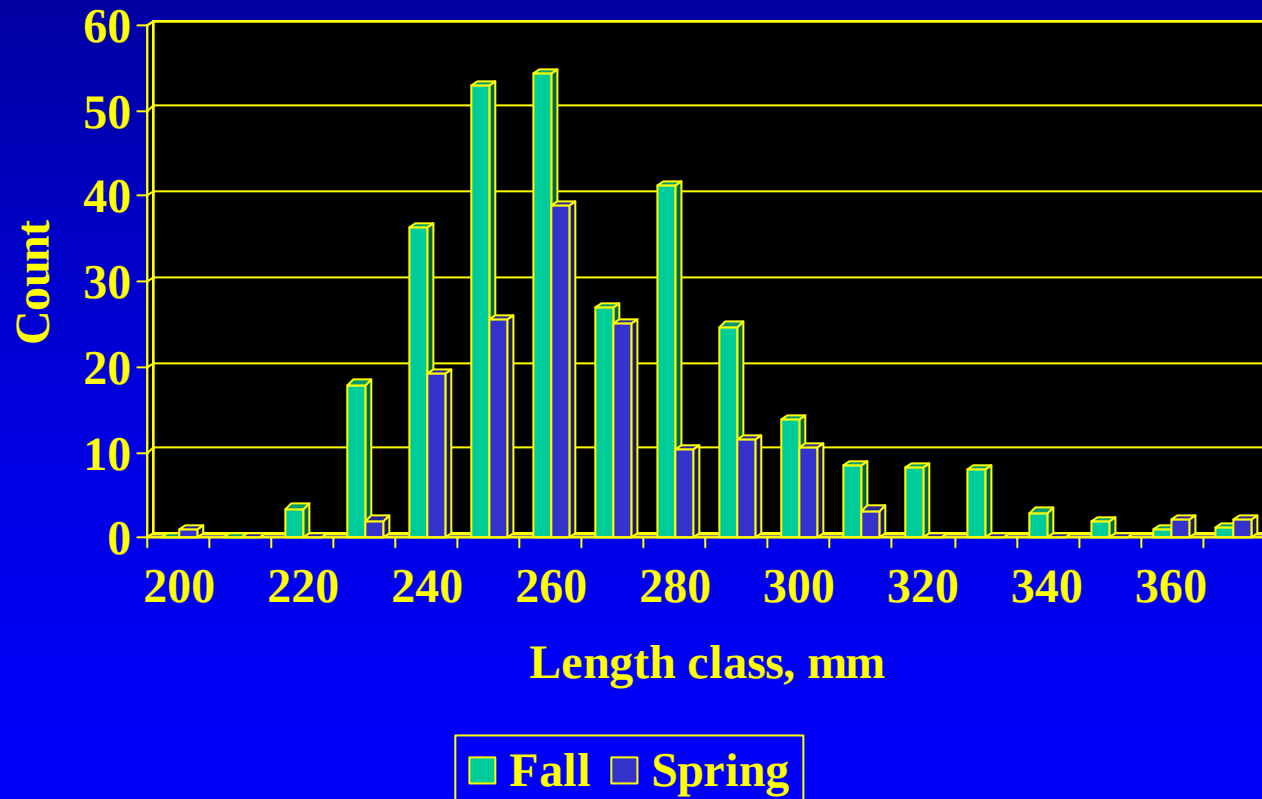


Length class, mm

Atlantic Croaker CPUE by Season, Galveston Bay Gill Net Data



Length-Frequency of Atlantic Croaker from Gill Nets



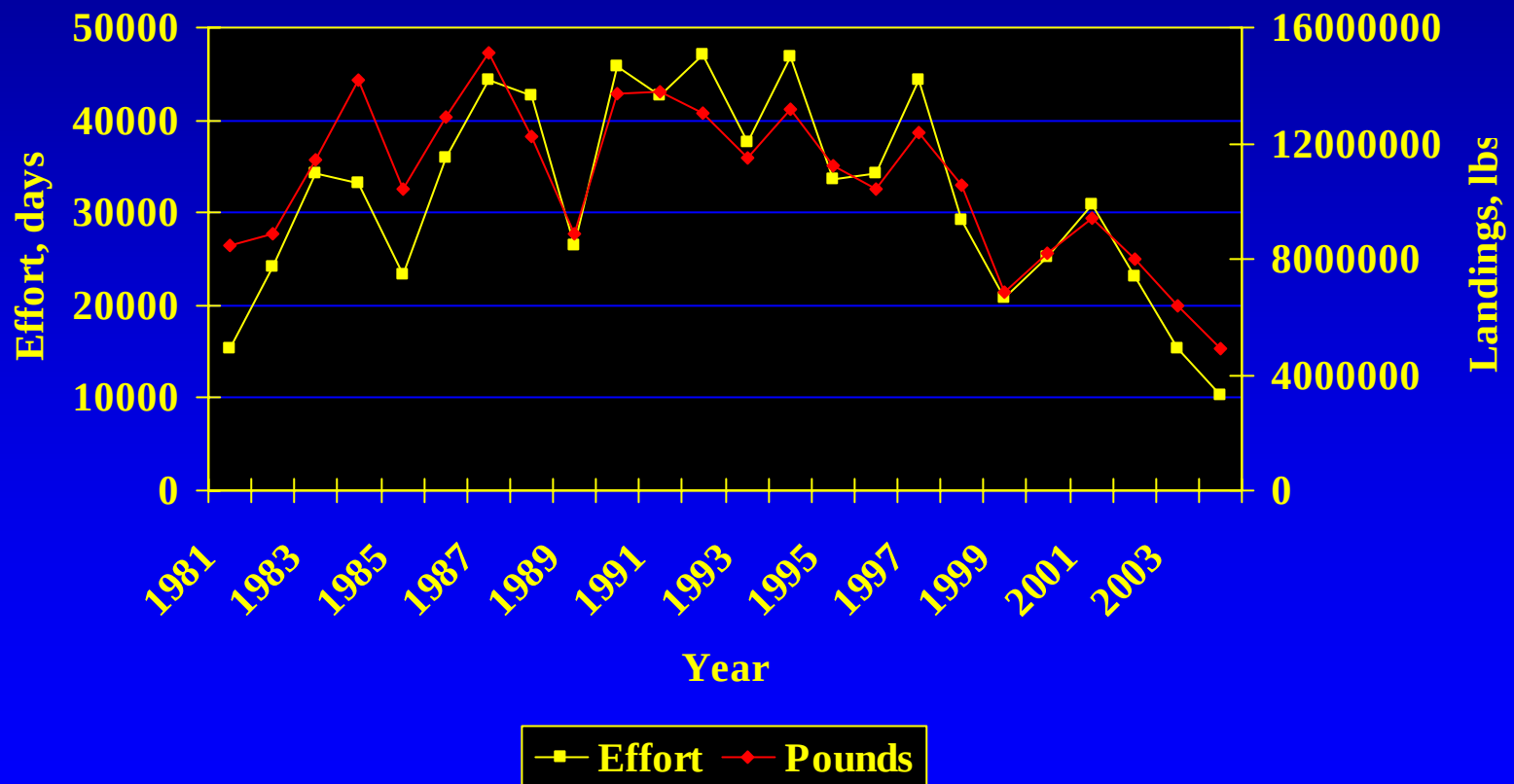
Spearman Correlation Matrix

	Gill Net	Trawl	Trawl 1 season lag	Trawl 2 season lag	Trawl 3 season lag	Trawl 4 season lag
Gill Net	1.000	-	-	-	-	-
Trawl	-0.3497 p = 0.0172	1.000	-	-	-	-
Trawl 1 season lag	0.6455 p < 0.0001	-0.2323 p = 0.1161	1.000	-	-	-
Trawl 2 season lag	-0.4439 p < 0.0001	0.7269 p < 0.0001	-0.2544 p = 0.0880	1.000	-	-
Trawl 3 season lag	0.5231 p = 0.0002	-0.2244 p = 0.1384	0.7258 p < 0.0001	-0.2854 p = 0.0574	1.000	-
Trawl 4 season lag	-0.4505 p = 0.0022	0.6692 p < 0.0001	-0.2313 p = 0.1309	0.7208 p < 0.0001	-0.3030 p = 0.0456	1.000

Summary

- Bag seines catch YOY croaker, early.
- Trawls catch YOY croaker, later and longer.
- Gill nets catch age 2+ croaker.
- All three gears reflect life history and significantly correlate with each other.

Total Effort and Landings by Texas Bay Shrimpers



Data from NOAA Fisheries