

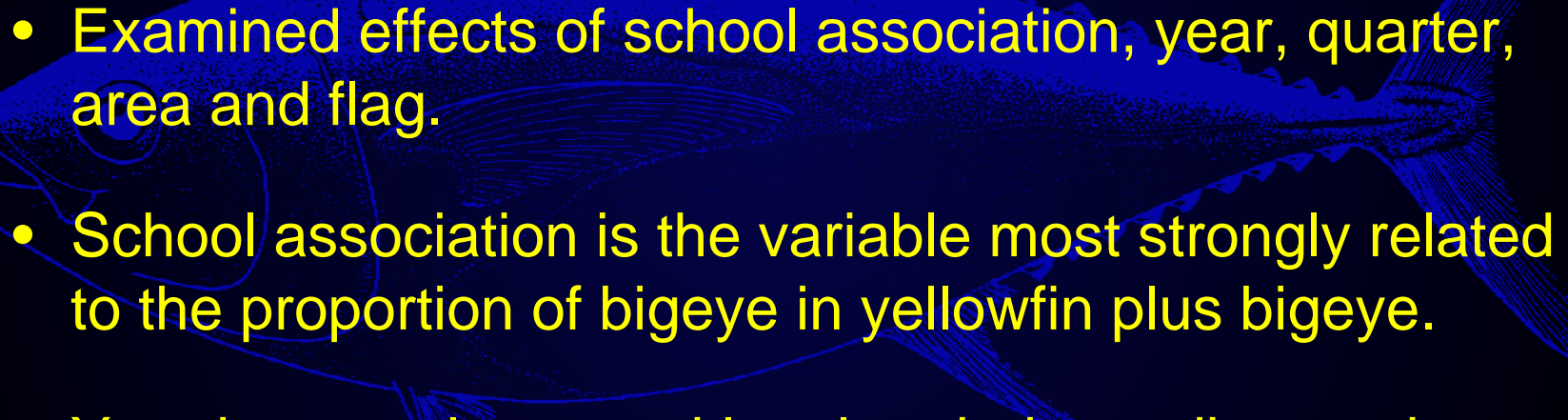


UPDATE ON THE PROPORTION OF BIGEYE IN 'YELLOWFIN
PLUS BIGEYE' CAUGHT BY PURSE SEINERS IN THE WESTERN
AND CENTRAL PACIFIC OCEAN

WCPFC-SC1 ST Working Paper 3

SCTB16 (July 2003) Working Paper SWG-6:

Analysis of the proportion of bigeye in 'yellowfin plus bigeye' caught by purse seiners in the Western and Central Pacific Ocean, based on observer data.

- Examined effects of school association, year, quarter, area and flag.
 - School association is the variable most strongly related to the proportion of bigeye in yellowfin plus bigeye.
 - Year is strongly or weakly related, depending on the other variables that are included in the model.
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WCPFC-SC1 ST Working Paper 4:

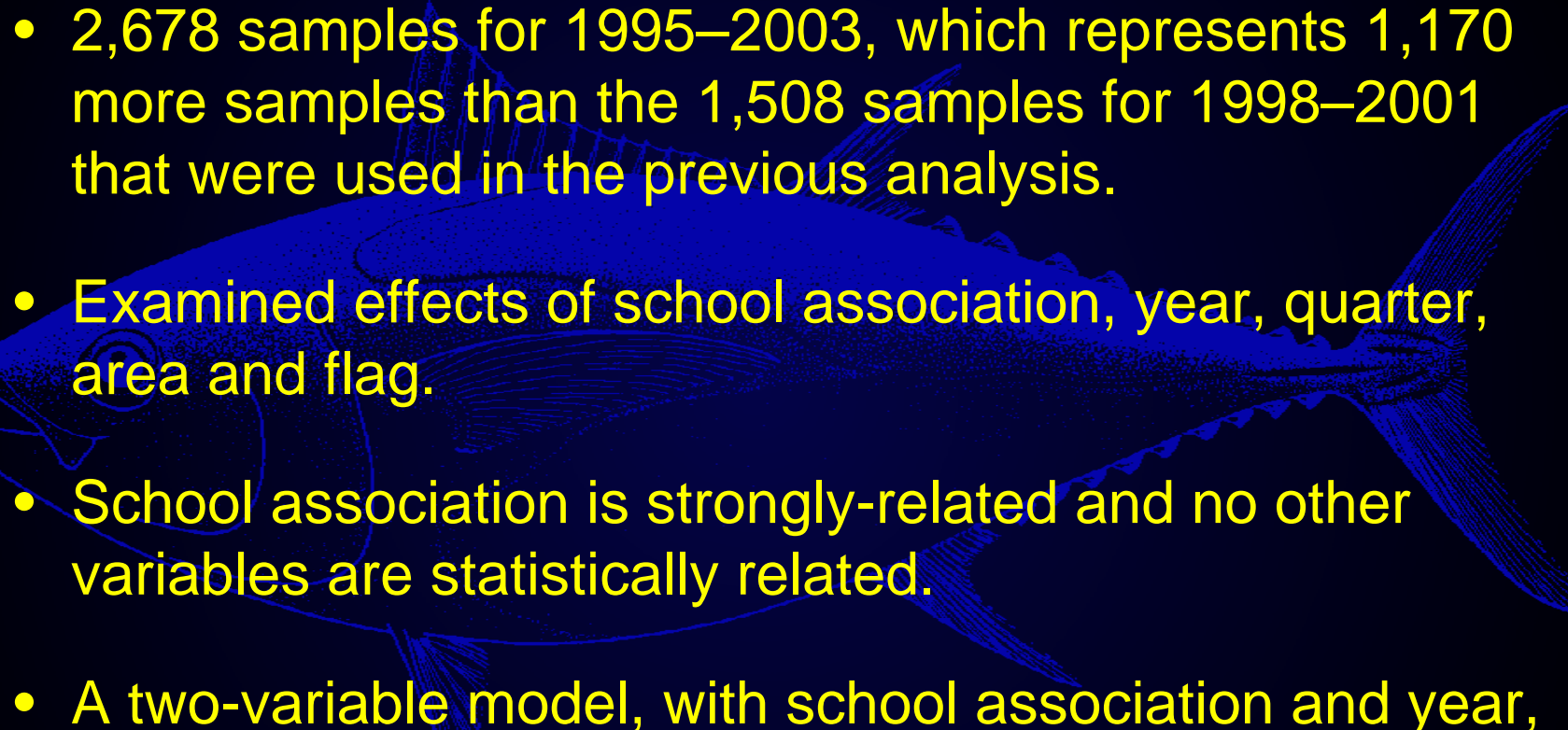
- 2,678 samples for 1995–2003, which represents 1,170 more samples than the 1,508 samples for 1998–2001 that were used in the previous analysis.
 - Examined effects of school association, year, quarter, area and flag.
 - School association is strongly-related and no other variables are statistically related.
 - A two-variable model, with school association and year, was used to determine adjustment factors to (a) capture the year effect and (b) improve the fit.
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- A detailed blue line-art illustration of a fish, likely a tuna, is positioned horizontally across the middle of the slide. The fish is facing left and is rendered with fine lines to show scales, fins, and facial features. It serves as a background element for the text.

Figure 2. Proportion of bigeye in 'yellowfin plus bigeye' for associated schools determined from port sampling data for the United States purse-seine fleet (1989–1994) and observer data for all fleets (1995–2003)

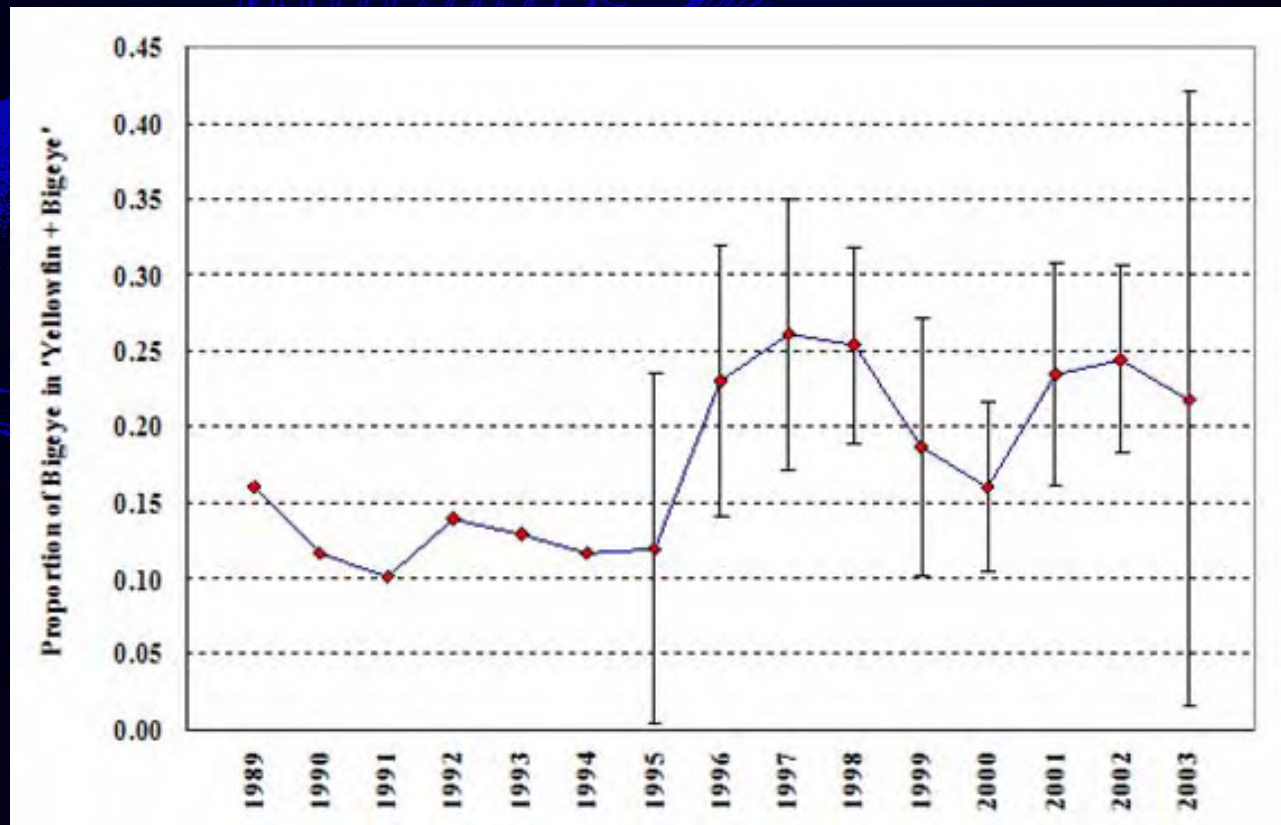
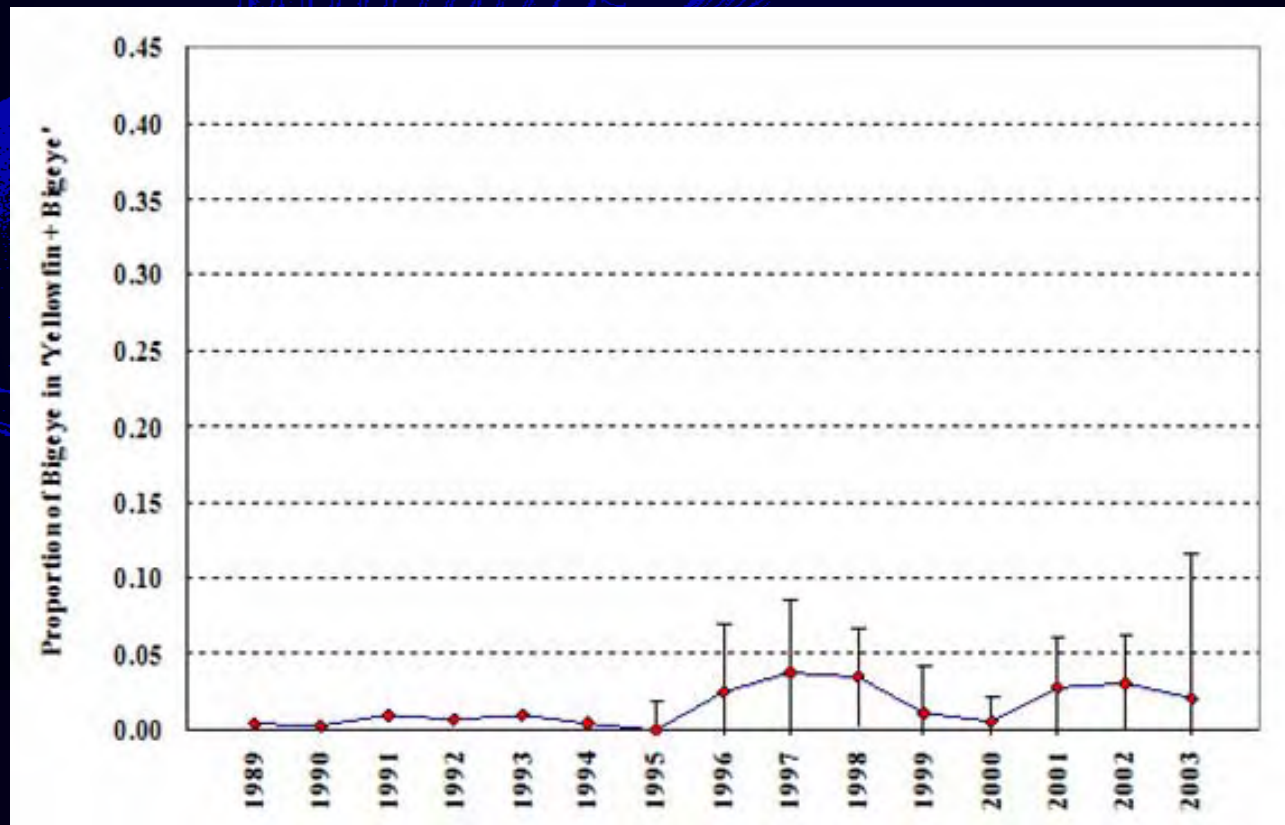


Figure 3. Proportion of bigeye in 'yellowfin plus bigeye' for unassociated schools determined from port sampling data for the United States purse-seine fleet (1989–1994) and observer data for all fleets (1995–2003)



Year	Annual Catch Estimates	1x1 Data	Adjusted Annual catch Estimates
1970	0.0	0.0	5.5
1971	4.3	4.3	7.0
1972	2.8	2.8	10.0
1973	2.4	2.4	8.5
1974	3.4	3.4	7.4
1975	4.5	4.5	8.7
1976	4.9	4.9	9.2
1977	4.2	4.2	11.0
1978	6.7	6.7	10.7
1979	3.6	2.1	8.4
1980	2.7	2.3	9.0
1981	3.3	3.1	11.0
1982	3.5	3.5	9.3
1983	4.5	4.5	9.1
1984	1.8	1.8	8.7
1985	2.8	2.8	9.0
1986	3.3	3.3	9.1
1987	3.5	3.5	8.2
1988	2.0	2.0	11.5
1989	3.6	3.6	11.9
1990	5.3	5.3	6.5
1991	3.9	3.9	5.4
1992	4.6	4.6	7.0
1993	3.2	3.2	6.2
1994	4.0	4.0	6.2
1995	3.5	3.5	5.5
1996	5.7	5.7	15.5
1997	12.8	12.9	18.9
1998	6.7	6.3	10.9
1999	7.4	7.4	14.6
2000	11.6	11.6	9.8
2001	15.4	15.4	13.5
2002	19.3	19.3	17.0
2003	15.8	15.8	14.5
Total	6.2	5.9	10.2

Table 4. Comparison of the percentages of bigeye in 'yellowfin plus bigeye' for the Japanese purse-seine fleet determined from (a) annual catch estimates for the WCPO provided by Japan; (b) catch and effort data for the WCPO aggregated by 1° latitude, 1° longitude and month, provided by Japan; and (c) annual catch estimates adjusted by the OFP

Year	Annual Catch Estimates	Adjusted Annual catch Estimates
1988	9.4	6.7
1989	5.3	5.1
1990	3.3	2.5
1991	4.0	3.2
1992	7.4	6.8
1993	7.5	6.6
1994	2.9	1.8
1995	9.1	4.3
1996	33.7	18.1
1997	15.5	16.6
1998	12.5	10.9
1999	35.1	18.3
2000	26.0	12.9
2001	21.9	14.1
2002	17.6	10.0
2003	14.7	11.1
Total	13.6	9.2

Table 8. Comparison of the percentages of bigeye in 'yellowfin plus bigeye' for the United States purse-seine fleet determined from (a) annual catch estimates for the WCPO provided by the United States and (b) annual catch estimates adjusted by the OFP