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Stock Composition of Sockeye Salmon Harvests in Fisheries of the Western Alaska Salmon Stock Identification Program (WASSIP), 2006-2008

VARIABILITY AND MAKING INFERENCES WITHIN AND OUTSIDE OF WASSIP YEARS

Like most other scientific studies, WASSIP analyses represent environmental and fishery conditions during a specific period of time. Nonetheless, these studies are conducted so that future scientific and policy activities may be better informed. We expect that WASSIP results will be cited for many years to come as the most comprehensive data set available to examine stock composition of sockeye and chum salmon in commercial and subsistence fisheries of Western Alaska. However, while this 3-year data set provides some measure of inter-annual variability in stock composition, some caution must be exercised when extrapolating the results to years not analyzed because changes in relative abundance among reporting groups, prosecution of fisheries, or migratory behavior due to ocean conditions might affect distribution of stock-specific harvests among fisheries.

In this study we observed large changes in stock composition within some fisheries and consistent patterns within other fisheries across years. For example, in the Western and Perryville districts of the Chignik Area (Tables 15-17, Figure 4, Appendices B13-B15), Chignik and East of WASSIP reporting groups made up almost all the catch in 2006 (99%-100%), decreased in 2007 (84%-90%), and decreased considerably in 2008 (40%-69%). On the other hand, the Chignik Bay District demonstrated consistent patterns among all years with Black Lake reporting group accounting for almost all the catch in early strata and Chignik Lake reporting group accounting for almost all the catch in late strata (Tables 9-14, Figure 3, Appendices B7-B12). These comparisons highlight that even this extensive data set over three years may provide limited insight into inter-annual stability of stock composition within fisheries. Longer-term variation in salmon productivity and migratory behavior (Thompson et al. 1992; Sayre et al. 2006) resulting from decadal scale environmental change, (e.g., Pacific Decadal Oscillation; Mantua et al. 1997) should be considered when extrapolating results from years sampled in WASSIP.

HARVEST OF IMMATURE OCEAN-AGE-2 FISH

The persistent and higher than expected proportion of Bristol Bay stocks in fisheries on the south side of the Alaska Peninsula in July was an unexpected result when reviewing draft estimates of stock compositions. Bristol Bay stocks were observed in Western and Perryville districts in July of 2007 and 2008 (Tables 16-17; Figure 4), Shumagin Islands Section post-June fishery in all