

3-3. Feeding Habits and Trophic Interaction (Poster-20)

Pacific Salmon Feeding Behavior in the Eastern Bering Sea in the August – October of 2003–2007

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In 2003-2005 Pacific salmon fed primarily on small-sized fishes (mostly juvenile walleye pollock, as well as Pacific sand lance, capelin, flatfishes and other species). For juvenile pink salmon proportion of juvenile fishes in their diets ranged between 58 and 89 % of total stomach contents weight, whereas for juvenile chum and sockeye salmon ranges were 56-69 and 68-82 %, respectively. The share juvenile fishes in juvenile chinook and coho salmon diets reached 88-100 %. In 2006 nekton species (primarily juvenile Pacific sand lance) were major food of juvenile chum and pink salmon (68-72 %). Juvenile walleye pollock, megalopa crabs and euphausiids were dominant food items of juvenile sockeye salmon. The stomach contents of adult sockeye (30-60 cm) and pink (40-50 cm) salmon was characterized by dominance of euphausiids (44-75 % and 82 % of totals stomach contents weight, respectively). Jellyfishes, euphausiids, pteropods and juvenile walleye pollock comprised the diet of large-size chum salmon (40-90 cm) in Bristol Bay. Hyperiid and jellyfishes were observed in juvenile chum stomachs (25-35 %). Significant prevalence juvenile fishes in a diets of pink, chum and sockeye salmon is related to high juvenile walleye pollock abundance and low forage zooplankton biomass during 2003-2005. The majority of zooplankton biomass was constituted by small-size and medium-size fractions. The large-size fraction of zooplankton, which is a major food component, made no more than 20-50 %. In Bristol Bay shelf proportion of large-size fraction has increased up to 60-70 % of total zooplankton biomass during 2006-2007. In 2007 majority of large-size fraction of zooplankton was constituted of chaetognaths and copepods. However, contrary to 2006, third position (in terms abundance) was taken not by jellyfishes, but by euphausiids (6, 5 % large-size fraction total biomass). In 2007 the proportion of euphausiids increased in chum, pink and sockeye salmon diets, as well as in predatory salmon species diets (chinook and coho salmon). In shallow waters of Bristol Bay euphausiids prevailed among food items of pink and sockeye salmon (57-100 %), whereas hyperiids were dominant in shelf zone (43-58 %). Nekton (primarily juvenile Pacific sand lance) occurred among food items of sockeye salmon with BL <40 cm. Euphausiids, megalopa crabs, hyperiids and pteropods dominated in juvenile chum stomach contents (up to 79 %). Jellyfishes were most often observed in diets of large-size chum salmon (up to 90 %). Most intensively ate juvenile salmon.